AMERICAN AGRICULTURIST

FOR THE

FARM · GARDEN · & · HOUSEHOLD

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON.

VOLUME XLVII.—No. 8. NEW YORK, AUGUST, 1888. NEW SERIES—No. 499.

A SURE CATCH.

Drawn and Engraved for the American Agriculturist.

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ENTERED AT THE POST OFFICE AT NEW YORK, N. Y., AS SECOND CLASS MATTER.

August.

See (and scorn all duller
Taste) how Heaven loves color!
How great Nature clearly joys in red and green!
What sweet thoughts she thinks
Of violets and pinks,
And a thousand flushing hues made solely to be seen.
—LEIGH HUNT.

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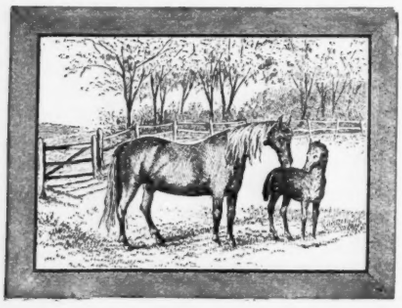
FARM AND GARDEN WORK

AUGUST, 1888.



There is no month in which work is less pressing than August, and no month in which a wise division of time will allow a farmer to accomplish so much of both work and of recreation. The motto of the month should be, "Go somewhere." If circumstances do not allow of a long journey, to see the ways of people at a distance, make a journey that may be completed by sundown, or at most by nightfall. The journey of a day, rightly extended, whether for mere recreation or to see some noted animals or improved machine, may be of vast advantage.... The great season of fairs begins this month; at least the time of preparation for fairs. If farm animals are to be exhibited do not fatten or pamper them into such a condition that you would not buy or expect to sell. The managers of fairs should offer prizes for the best, which does not always mean the fattest, the largest, etc.... If cabbages are grown, select the finest from the field, and not a few fed with liquid manure for the purpose. So with apples or other fruit; select a branch, and thin half or more of the poorest fruit from it. This will cause the rest of the fruit to grow much finer, and is all right and honest, as all the other trees might have been treated in the same way.... In no implements have greater improvements been made than in weeders. They are not always called weeders, but their use allows the farmer to keep his field as clean as a garden. At the fairs examine these weeding implements; to buy one of the best may be a good investment. Having a good weeder, keep it in motion. It is not only important to uproot weeds, but to prevent them from ripening their seeds. If so far advanced that they will ripen in the pig pen or manure heap burn them. A little brush will make fire enough to kill the seeds of many weeds.... The root crops should be thinned, and strap-leaved turnips may be sown in twenty-eight or thirty-inch drills, using 150 to 300 pounds of superphosphate of lime to the acre. Work between the rows of root crops until there is danger of injuring them. Dig potatoes as soon as the tops die down, and do not allow them to be exposed to the sun.

Live Stock Notes.

The value of a small grove of trees in the pasture will be seen this month. Trees can be often had upon the place for digging, or they may be bought for a few cents each; and it will pay better to buy trees that will be of value in a few years—like white ash, black walnut, etc.—than to plant poor trees. Meantime put up a temporary shed of brush to give the cows and other animals a shelter. After work, if a safe stream is not too far off, let the boy and horses enjoy a bath, but avoid a dangerous and muddy bottom.

Flower Garden and Lawn.

Cut the lawn but moderately until the new growth warrants it. When the late storms come on, dahlias are apt to be badly broken; the side branches need stakes. Tuberoses, gladiolus and lilies are among the plants usually needing care. Use neat natural stakes, and avoid those green painted horrors with white heads. Unless it is desired to save lily seed, cut away the seed vessels as the flowers fall, in order to strengthen the bulb. Pick off caterpillars. Chrysanthemums need to be made ready for the fall showers. If any plants in the open ground are to be potted for exhibition, take them up at once and give them a chance to become established.

Greenhouse and Window Plants.

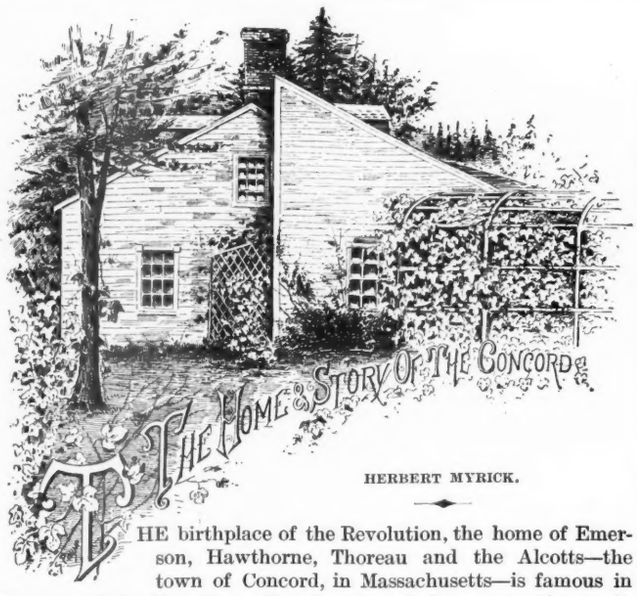
The work in the greenhouse is mainly preparatory, and the sooner it is done the better. Repairs to the greenhouse and heating apparatus are, as a rule, better intrusted to the builders of them. Get in a supply of soil, sand, pots and moss. A good cellar makes an admirable annex to the winter garden.... It is not too early to decide upon what are to be the leading features of the window garden, and ascertain where the plants are to come from. If any plants are to be lifted from the open borders be ready to do it next month. See to the potted plants that were taken from the window to the open air. If any of these are to go back again, begin early to free them from insects, to give fresh soil and to prune into shape, that they may be ready to go on at once.

Orchard and Fruit Garden.

Early varieties of apples and pears are now ripening for marketing and home use. The early varieties, if properly handled, are profitable. They should be picked before they have softened at all. In packing these early varieties observe the custom of the market; price depends largely upon appearances. The packages, half-barrel crates, etc., should be new and bright, and the fruit so firmly packed that it cannot shake and become bruised in transit. From the number of peach trees planted a few years ago there will probably be many orchards come into bearing for the first time, and in the hands of those without experience. The great trouble in peach growing is to procure good pickers. If it is possible to secure experienced hands, do so in advance. Of course the probable number of baskets, crates and ladders and tags required have to be provided, and above all the commission man, to whom to consign the fruit, must have been engaged beforehand. When picking begins all is hurry, and delays are costly. In the great peach regions which find their market in New York, the growers form associations for mutual co-operation in dealing with the various lines of transportation; to fix upon rates of transit and to arbitrate in differences and disputes. So far as can be described the peach when picked should be in that condition that it will be in a state fit to be eaten by the time or soon after it reaches the consumer. The picker requires a nice sense of touch, which practice only can give. An over-soft peach will spoil in a basket or crate, and the loss usually falls upon the grower. Each grower's package is plainly marked with the raiser's name, who should strive to make that name stand for good fruit and honest packing. In spite of every care much fruit will get too ripe to be shipped. In the peach neighborhoods over-ripe fruit is disposed of to canners, evaporators, distillers, etc., if the planter does not dispose of his fruit himself. Usually the fruit as it is packed is assorted into three grades. The pear is always better if ripened after being picked; not so the peach. While the fruit should be of the same size and quality from the top to the bottom of the package it is regarded as proper to "face." This consists in merely dressing the top layer of fruits, carefully turning each so that its sunny or colored side or cheek should be uppermost and at the same time to neatly round off the top layer. This does not in any manner deceive the purchaser, as the fruit is the same that it was before it was faced. This treatment of facing is allowed with other fruits and when properly done is not objectionable. After the harvest, it is the custom of some of the planters to turn the pigs into the orchard to eat up fallen fruit and destroy the insects they may contain.... Blackberries differ in their appearance when ripe. Some will be jet black and still remain hard. The old canes of these as well as of raspberries should be cut away and burned as soon as the crop is picked. If new shoots appear and there are already as many as needed to each stool, unless new plants are wanted to fill blanks in the rows, treat like weeds. New shoots of the blackberries should not be allowed to grow taller than five feet; when at this hight the tops may be pinched out. This will cause lateral or side shoots to grow. When the lowest of these shoots are ten inches high they should be stopped by inches and so on, shortening the upper shoots to about six inches.

To Get the Best Prices.

To obtain the best prices for produce, it is not only imperative that your produce be equal to the best, but you must also be mindful of the condition in which it reaches the market. Particularly is this the case with fruit and berries, the finest of which will be sure to net you unsatisfactory returns, if packed in dirty, broken crates, baskets or barrels. Put your name on everything good that you ship, and ship nothing as first-class unless it is strictly so. Find an honest commission man to handle your goods and stick to him year after year. Establish with consumers a reputation for shipping the best of everything in the best possible shape. City people usually patronize the same markets year after year, and they always look for the brand that has suited them in the past.

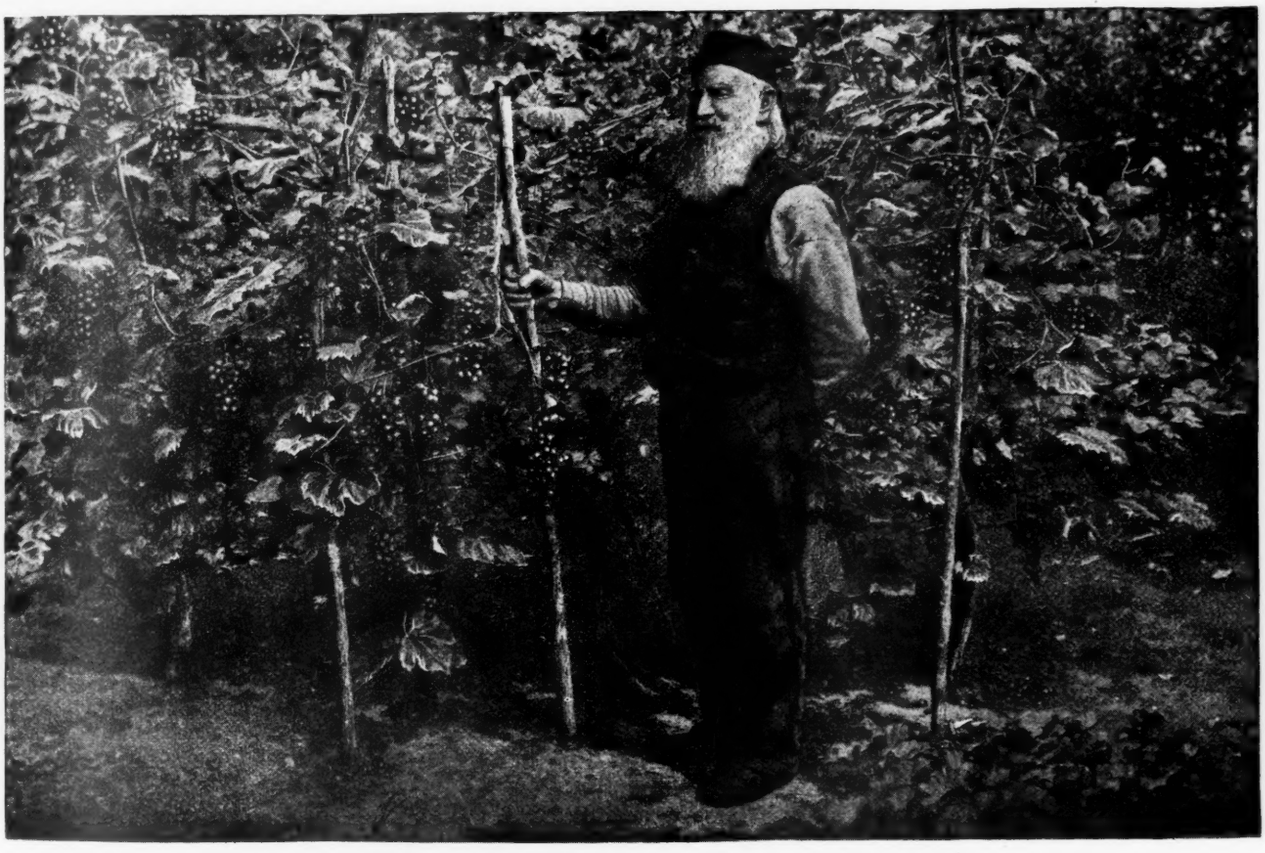


HERBERT MYRICK.

THE birthplace of the Revolution, the home of Emerson, Hawthorne, Thoreau and the Alcotts—the town of Concord, in Massachusetts—is famous in history and in literature. But its name is known to thousands unversed in the story of our Independence and untutored in the philosophy of the Sage of Concord, the weirdness of Hawthorne, Thoreau's quiet tales of nature, or the lighter and brighter works of one just gone whose name is a household word among our "Little Men" and "Little Women." To the masses, Concord is best known as the name of the grape which, after thirty years, still holds its place as the great standard hardy grape for all soils, all climes and all exposures throughout the temperate and colder regions of North America. Nor is the Concord confined to one continent. It is proving the salvation of the famous French vineyards, in which the Concord stock is taking the place, under government sanction, of the phylloxera-stricken French varieties. It was introduced in Austria by royal authority, is grown by peasant and nobleman in the low countries of Europe, and the dusky natives of the Sandwich Islands unite with the fruit growers of far-off New Zealand in paying tribute to American genius by growing the Concord grape.

The originator, Ephraim Wales Bull, still lives in his humble cottage close by the original Concord grapevine. The world of horticulture, far more than himself, has profited by his labors. He has reaped no pecuniary advantage out of his great discovery, and now in a feeble old age lacks the comforts and attentions—the means for securing which his services to the public should have brought him. For, until the advent of the Concord, grapes were a luxury enjoyed only by the wealthy. Although the Isabella, brought out as a wild seedling nearly twenty years before by George Gibbs, and named after his wife, was well known, as was the Catawba (a wild grape from the banks of the Potomac, domesticated by Major Adlum of the District of Columbia), neither was hardy enough to survive the cold northern winters. Now no home is too humble to be without the Concord, or some of the other varieties of native origin that have been produced since its introduction gave such an impetus to the improvement of our native varieties.

Mr. Bull was born in Washington Street, Boston, March 4, 1806, and as a boy took great delight in the home garden. The public schools were his college and gold-beating became his profession, which he followed for years, until, in 1837, he was compelled by waning health to take up a country life. He bought a small place at Concord, not far from the home of Ralph Waldo Emerson, and devoted himself to fruit culture, with a determination to produce a perfectly hardy grape. It occurred to him that the wild grape had been waiting for us for years, and that it possessed an ancestry and lineage that combined to make constitutional vigor and hardiness of inestimable value, if its wild habit could be broken so that its size and quality might be improved by careful breeding. The wild grapes along the Concord were of various colors and characters, and had interbred for years. This habit made the work of improvement far more promising than if a single strain of the wild fruit had grown on year after year, developing more fixed characteristics as time went on. To this fundamental cause, Mr. Bull attributes the many white seedlings given by the Concord. After some hunting for the most promising wild grapevine, an accidental seedling



THE FIRST CONCORD GRAPEVINE AND ITS ORIGINATOR.

Engraved for the American Agriculturist from a Photograph (by Munroe) of the 1886 Crop on the Original Vine.

of the true *Vitis Labrusca*, the wild grape of New England, that came up in his garden from a seed probably dropped by a bird, was chosen. It was a sweet and good grape, for a wild variety, with large black berries, very prolific, and its whole crop was ripe by August 22, in the fall of 1842. The seeds of the best of the fruit were planted the next year, the most promising seedlings were carefully nurtured, and six years later, in 1849, bore their first crop. Only a single vine among the many proved of value, but that one was a priceless pearl—the Concord grape.

After three years' testing, Mr. Bull finally exhibited the Concord before the Massachusetts Horticultural Society in 1852 as a seedling from a native grape. Up to that time, amateurs and professionals had considered it impossible to produce from wild varieties a grape free from the objectionable foxy nature. True to their prejudices, the dilettanti made war upon it, and even the late A. J. Downing was fiercely "down" on it. But its merits speedily pushed the Concord into public attention, and when it was introduced by C. M. Hovey & Co. of Boston, in 1854, the first year's sales amounted to $3,200—an extravagant sum to be realized on a new fruit in those days. It was first fully described in Hovey's *Magazine of Horticulture* in 1854, and the next year was generally grown by nurserymen, who reaped a harvest from its subsequent sale. Thus it slipped from the control of the originator, who was left only the glory of giving such a blessing to the world. Mr. Bull has ever since pursued his attempts to further improve the grape. His object has been to produce a variety of better quality while equally hardy and productive. He has evidently succeeded in his new black grape, which though still withheld from the public has proven to be of a high order of merit. Another fruit of his long labors as a specialist will soon delight connoisseurs—his new white grape. May he profit handsomely by their propagation! Mr. Bull was elected by the American party to the lower branch of the Massachusetts Legislature in 1855, and to the State Senate in 1856. That year he was appointed to the Massachusetts Board of Agriculture, in which he served for twelve consecutive years. His work and sayings added much to the value of the Transactions of the Board. Secretary Flint well says of him: "He did more probably than any other man, through the admirable papers which he furnished, to awaken an interest in the cultivation of the grape." The revered "Father of American Pomology," Marshall P. Wilder, said shortly before his death: "Mr. Bull is and ever has been a most worthy unpretending gentleman. Since he secured the famous Concord no other modern variety has been so extensively cultivated in our northern climes, or so appreciated by the public. Had Mr. Bull done nothing else for the benefit of mankind, his name would be held in grateful remembrance, while the fruit of the vine shall cool the parched tongue or its juice make glad the heart of man."

Concerning the merits of the Concord, Mr. Bull writes with justifiable pride: "The original Concord grapevine bore its first crop six years from the seed. Nearly all of its seedlings have fruited in six years from seed. Other varieties of grapes may and do fruit in three or four years, but their merits are not permanent. The Concord has given us nearly all the best grapes of to-day. Its seedlings stand; they possess intrinsic merits."

THE CONCORD GRAPE.

THIS VERY REMARKABLE
AMERICAN VARIETY,
IS THE
GREATEST ACQUISITION
That has ever yet been made to our
HARDY NATIVE GRAPES,
and supplies the desideratum so long wanted,
OF A
SUPERIOR TABLE GRAPE,
sufficiently hardy to withstand the coldest climate,
and early enough to ripen its fruit
IN ANY PART OF THE NORTHERN
—OR—
New England States.
It is four weeks earlier than the Isabella,
and about
Two weeks earlier than the Diana.
IT IS FULLY RIPE
From the 5th to the 10th of September,
AND FINE SPECIMENS
Have been exhibited the last two years,
AT THIS DATE, BEFORE THE
Massachusetts Horticultural Society.

IT IS A MOST VIGOROUS
GROWING VINE,
PERFECTLY HARDY,
With Bunches of Large Size,
handsomely shouldered, often weighing
A POUND EACH,
and with large roundish oval berries, frequently measuring an
INCH IN DIAMETER;
COLOR VERY DARK, COVERED WITH
A THICK BLUE BLOOM;
Flesh soft, tender and juicy; throws very little
seed, however, with a fine delicious aroma.
The foliage is large, broad and thick;
—ETC—
The Berries have never been known to
Mildew, Rot, or Drop Off,
UNDER ANY CIRCUMSTANCES,
Making the few years since it has been fruited
GOOD JUDGES
WHO HAVE TASTED IT, PRONOUNCE IT
SUPERIOR to the ISABELLA
IN ITS RIPEST CONDITION.

Fine strong one year old plants, raised from the original vine, by E. W. BULL, will be ready for sale April 1, at $2 each, and to the trade at $18 per dozen, safely packed without charge.

The following testimonials in regard to the quality of the Concord Grape, are selected from a multitude of letters from cultivators in various parts of the country, from the notices of the press, and the Reports of the Massachusetts Horticultural Society:

CALEDDIA, Pa., Oct. 11, 1854.
"Your kind favor of the 7th October, (1854,) was received upon Monday evening, wherein you state that you had sent me a box of the Concord Grape. This evening they arrived; they were a little sour-ripe, but not so much so as to be unfit to eat. And now, to be candid with you, I would say that it is one of the best native Grapes that has, regardless of its ripening two or three weeks earlier than the Isabella; which early ripening will make it exceedingly valuable here, where we raise the Isabella and Catawba to perfection; but in your Northern zone, where the two last named varieties often fail to ripen at all in the open air, I consider this grape to be of exclusive and inestimable value."
JOHN, post truly.
SAML MILLER.

"Nearly two months ago, E. W. Bull, of Concord, Mass., sent us a box of his Concord Grape, but the weather being warm, they were all spoiled with the exception of two bunches. These we liked much—they were in appearance larger and finer than the Isabella, and quite as pleasant in their flavor. We hope grown day we have a better opportunity to judge of the merits of this grape."—*Ohio Farmer*, Dec. 1854.

"We have received from E. W. Bull, of Concord, a fine specimen of the Concord Grape. This new seedling is attracting much attention among horticulturists, and deservedly. It is a large and handsomely shouldered grape, and the flavor of the specimens we have tasted is superior to that of the Isabella."—*Boston Journal*, Sept. 1854.

"In our opinion the Concord Grape possesses, in a high degree, the essential properties of a perfect grape,—beauty of form and color, richness of fragrance and flavor, and abundant juiciness. Its skin is thin and remarkably free from astringency. The vine is a free grower, an abundant bearer, very hardy, and ripens two or three weeks earlier than any other good variety with which we are acquainted."—*L. Ruggles, Secretary of Farmers' Club, Concord, Mass.*

CATTARAUGUS, N. Y., Oct. 31, 1854.
"I received your letter of the 28th Oct. 1854 and yesterday the box containing a bunch of the Concord, reached me in good condition. I am highly pleased with it, and have no hesitation in saying that it will be a fine Grape for the table and for wine. Several have tasted it and think it in taste quite similar to the Catawba, though not as distinctly marked. I enclose you $5 for it now, to be forwarded as soon as it will do to ripen."
JAS. JOWERS.

CAMBRIDGE, Mass., Sept. 19, 1854.
"I have taken the liberty to give you the impressions my kitchen in your garden produced in my mind. The exhibition of your new Seedling Grape, now taken with the luscious fruit, was to me perfectly satisfactory. Its size, beauty, rich bloom and fine flavor of the Grape fully answer the glowing descriptions that have been given to it. None can look upon the wonderfully luxuriant vines, loaded with their rich clusters, without resolving to obtain one for his own garden."—REV. A. BULLARD.

MR. MILLER, of Columbia, Penn., says:—"Last summer, when all my native and foreign vines had lost most of their foliage, the Concord was the only vine which kept its foliage throughout."

"We acknowledge the receipt of a box of Grapes from Mr. Bull, of Concord, Mass. It is a deep purple grape, bordering on the black; the berry round, larger than the Isabella; bunch large, Grape dense, skin thin, flesh tender, pulp small, flavor sweet and delicious. The vine is perfectly hardy, of rapid growth, and a great bearer, and ripens at least three weeks earlier than the Isabella, which is certainly a consideration. This grape will surely take the place of the Isabella and Catawba, wherever its many good qualities are made known."—*Boston Transcript*, Sept. 28, 1854.

"On the whole an excellent grape."—*Am. Agriculturist.*

"We regard this grape as an important acquisition."—*Horticulturist*, Dec. 1854.

"We tasted at our late State Fair, several specimens of this new Eastern Grape, and were agreeably disappointed in it. The berries are from a fourth to a third larger than either the Isabella or Catawba; the bunches are larger and heavier; the vine is far hardier than any native of Northern origin; and the fruit ripens from three weeks to a month earlier."—HORACE GREELEY, *New York Tribune*, Oct. 1854.

"I have watched this Grape with much interest for some years; I know of its delicious fruit, its hardihood, its vigorous growth, and early ripening. I have eaten freely of the fruit of the vine, and am free to confess that I would willingly subscribe to and sanction the most laudatory article that has ever been written on its fruit."—*New England Farmer*, March, 1855.

"As to the real merits of this variety, we are inclined to consider it a valuable acquisition. As a hardy vine, and an early, large and showy fruit for market, we shall not probably find any thing to compete at the North with the Concord Grape."—*J. J. Thomas, Country Gentleman, Albany N. Y.*

"I regret the Grapes I received from you did not keep longer. They gave the utmost satisfaction, and every good judge of fruit said they were decidedly better than the *Isabella*."
JAMES, N. Y., Oct., 1854. J. D. INGERSOL.

"The most beautiful" of the new hardy grapes "is undoubtedly the Concord."—J. F. ALLEN *Report Mass. Hort. Soc.* for 1854.

The testimony in favor of this Grape is certainly very full and from well known horticulturists. It may be pronounced large handsome, and excellent.—*Horticulturist*, Dec. 1855.

Opinions of the Massachusetts Horticultural Society.
1852, Sept.—Seedling grape from *Mr. Bull*, large, handsome, and excellent."
1853, Sept.—"Fully equal to specimens had year, and proved to be a remarkably early, handsome, and very superior grape."
1854.—"We proclaim a general exultation."—
1855.—The Society gave *Mr. Bull* their Silver Medal.

The Concord was exhibited at the Middlesex Agricultural Society's Fair, and received the first premium of Five Dollars, as the "best native Grape." Ira Ialo received the first premium of the Middlesex North Agricultural Society. Three bunches, on one spur 12 inches long, and weighing 2 1-2 lbs. were shown by the proprietor. Single bunches have been exhibited, weighing 1 1-4 lbs. It is perfectly hardy and very prolific, and has never been affected with rot or mildew in the garden of the proprietor, although other varieties upon the same trellis were.

The Concord makes a delicious wine, which has received the unqualified approbation of connoisseurs. It has an abundant juice, and has yielded *twenty bottles of wine to the bushel.*

CONCORD, MASSACHUSETTS. 1856.

M. TOLMAN, PRINTER, CONCORD.

THE FIRST ADVERTISEMENT OF THE CONCORD.

A Fac-Simile, Greatly Reduced, of the First Hand-bill sent out by Mr. Bull.

POP-CORN AND SUCCOTASH.

A "Young Farmer," who asks for "an early answer," wrote us some time ago but gave no name. We can see no reason why "Young Farmer" should not give his name, and as a rule we do not answer such letters; but the questions he proposed interested us, and we laid his letter aside until we could conveniently look up the subjects. He asks us: "Who discovered pop-corn?" and "Who invented succotash?" There are several varieties of corn which possess the quality of popping which differ greatly from one another. One of these, the "Rice Pop-corn," differs as much from the others as do any of the kinds from ordinary field-corn. Its kernels are pointed, and each one has at the end the remains of the pistil (silk), which remains hardened as a rough protuberance. These points in some cases make the ears very rough and unpleasant to shell by hand. The kernels are much less flattened by crowding than are others, and they have often a pearly luster that is peculiar. Other varieties differ from ordinary corn only in size of grain, and are in white, yellow and red colors. We do not find that writers upon Indian corn throw any light upon the history of the pop-corns. They are all smaller than the field varieties. Their popping when gently heated is due to the sudden conversion into gas of the oil contained by the kernels. This sudden liberation causes a rupture of the grain, accompanied by a popping noise; the grain is curiously inverted, being turned inside out, exposing the starch-grains of a glistening whiteness. Whether the Aborigines knew pop-corn we have not been able to learn, though they were very fond of parched or roasted grains of field-corn. Parched corn constitutes one of the principal "rations" taken by our Western Indians when they start on a journey. Many years ago some friend in Ohio sent us a specimen of Brazilian pop-corn; the grains the smallest we ever saw, and of a very dark blood-red. If any one still has this variety will he kindly send us a few grains?

Succotash, as its name would indicate, is of Indian origin, probably from the Narragansett tribe. The writer recollects to have read, when a youth, a work by Roger Williams on the Narragansetts, in which the mixture of beans and corn was described under this name. Cooper makes one of his Huron Indian characters speak of succotash. The dish has long been a favorite, especially in the Middle States and New England.

POULTRY NOTES.

The best breed of fowls you can select, and the one which will prove most satisfactory to you, is the breed you fancy.

In breeding the smaller varieties, such as Leghorns, Hamburgs, etc., separate the cocks from the hens. During September a lot of young vigorous cockerels should not run with the moulting hens.

All birds that feather out early are hard to raise, and only extra attention of the right kind will save a large percentage of them. The severe drain upon the system of the little chicks in feathering is the cause of this.

THE BANTAM FAMILY.

H. S. BABCOCK, RHODE ISLAND.

There are seven varieties of Game Bantams—Black-Breasted Red, Brown Red, Red Pile, Silver Duckwing, Golden Duckwing, Black and White Bantams—having the shape, color and markings of the corresponding varieties of Game fowls. Of Bantams other than Game there are eight recognized varieties, besides quite a number that are not as yet generally known in this country. The eight recognized varieties are Golden and Silver Sebrights, Rose-combed White and Black, Booted White, Japanese, Pekin or Cochin, and White-Crested White Polish. Among those not generally known are Partridge Black and White Cochins, Brahmas Dark and Light, Malays, Golden Polish, Cuckoo, and Frizzled Bantams.

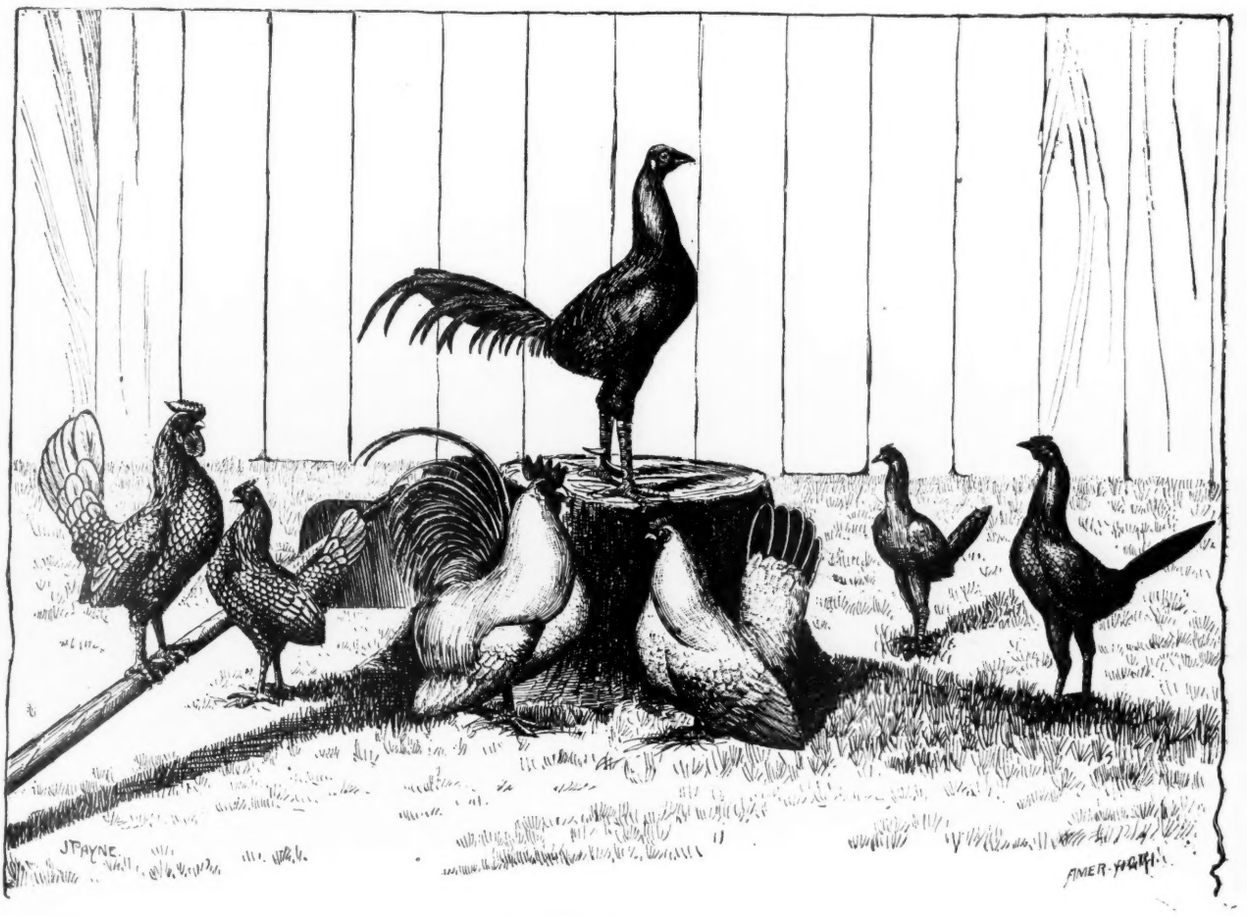
The Sebright Bantams have rose-combs, the males have no sickle feathers and no pointed hackles, and have either a golden or silvery white ground color, each feather having a narrow lacing of black. The Rose-combed Bantams are diminutive Black and White Hamburgs. The Booted White is a pure white bird with very heavily feathered shanks and toes. The Japanese is an odd-looking variety, with very short legs, the plumage mainly white, large single comb, and the tail of the cock is black, carried in a very erect manner and provided with long and slightly curved sickle feathers which have a narrow white lacing. In a good specimen the tail is as high or higher than the head. The Pekin or Cochin Bantam is a small Buff Cochin. The White-Crested White Polish is, as its name indicates, a small White Polish, but has a single comb instead of the V-shaped comb of the larger fowl.

The standard weights of Game Bantams are: For the cock, twenty-two ounces; cockerel, twenty ounces; hen, twenty ounces, and pullet, eighteen ounces. The standard weights of Bantams other than Game are: For the cock, twenty-six ounces; cockerel, twenty-four ounces; hen, twenty-four ounces; pullet, twenty-two ounces.

Bantams are fair layers of small eggs; they will lay not far from sixty eggs a year. They are, though small, excellent for the table, having an abundance of white meat. As they are very small eaters, there is little doubt that they will pay a fair profit, even when kept for purely commercial purposes, though the smallness of their eggs and of their bodies would be an obstacle to their sale in most places. For home consumption this would, of course, be no serious objection. The two birds seen to the left in our engraving are Silver Sebrights, the two lower ones in the center are Japanese, and the remaining three are Black-Breasted Game Bantams.

Nutritive Values.—Z. H. Postles, Matthews Co., Va., asks about the comparative nutritive ratio of oats, corn, peas and bran, and their value as food for calves and pigs. Careful scientific analyses of these substances have shown them to contain digestible nutrients as shown below:

	Albuminoids.	Carbohydrates.	Fats.	Ratio.
Oats	9.0	43.3	4.7	6.0
Corn	8.4	60.6	4.8	8.6
Peas	20.2	54.4	1.7	2.9
Bran	12.6	42.7	2.6	3.9



THREE VARIETIES OF BANTAMS.

The albuminoids shown in the first column are the muscle-forming elements, the carbohydrates and fat of the second and third columns produce heat and fat. It will be seen that in corn the latter greatly predominate, while peas and bran contain a comparatively large proportion of flesh-forming ingredients. The difference is distinctly seen in the fourth column, which represents the ratio of the two classes of nutritive constituents. Thus while oats show a ratio of 6.0 carbohydrates and fats to one of albuminoids, and corn 8.6 of the same, peas have a ratio of only 2.9 fat and heat-producing elements to one of muscle-formers. The average ratio found most favorable for growing animals is about four of carbohydrates to one of albuminoids. What is called a well-balanced food, which shall represent about the ratio named above, is made by mixture. There are other considerations, however, which are not determined by chemical analysis. The food should be palatable, easy of digestion, and adapted to the various conditions, whether of growth, labor, or fattening. An animal while kept at work requires a greater proportion of heat and fat-producing elements than when at rest, and more in cold weather than in warm; while a fattening animal must have a still greater ratio. Every farmer should understand these principles and use common sense in applying them.

FARMING IN THE RED RIVER VALLEY.

GEORGE A. MARTIN.

The Red River of the North rises in Minnesota and marks a considerable portion of the boundary line between that State and Dakota, flowing thence northward through Manitoba to Lake Winnipeg. Its valley is a broad, level plain of great fertility, the soil consisting of black alluvium. The first attempt of white men to occupy this region was made by Lord Selkirk, who, in 1812, planted a colony of Highland Scotch on the site of the present city of Winnipeg, Manitoba, and soon after founded the settlement at Pembina, which was afterwards found to be within the boundaries of the United States. With the exception of that quaint and unique settlement, the rich valley of the Red River south of the boundary line lay untouched by the plow until the construction of railroads through it gave an impulse to settlement and introduced the era of "bonanza farming." The prairie sod was broken on the Grandin, Dalrymple and other large farms and they were seeded to spring wheat. Smaller holders followed with similar methods, and throughout the region crop after crop of spring wheat is now raised from year to year. Improvements in agricultural implements have facilitated the work. The broadcast seeder, the use of which required a bushel and a half of seed per acre, has been largely replaced by the press-drill, which requires but one bushel per acre, and deposits it in drills with the light, friable soil pressed firmly over it. Most of the plowing is done by sulky or walking gang-plows, each drawn by four or five horses and turning four to five acres per day. As a general rule, on the large wheat farms, one man and four horses, with the necessary implements, are employed during the busy season for each one hundred and sixty acres.

This system of exclusive cropping to wheat is well enough for a beginning, but it cannot be steadily followed with ultimate profit. Wheat is an enticing crop, demanding but a few weeks of labor to prepare and seed the ground, and still less to harvest, thresh and market the crop, which brings immediate returns in cash; but it exhausts the fertility of the soil, giving nothing back, and in less favored regions has always led to poverty and ruin. Great farms cause a sparse and widely-scattered population. The farmer of moderate means who devotes his smaller farm to wheat, labors under a serious disadvantage for want of storage room. He must haul his wheat directly from the thresher to the railroad elevator, thus placing himself at the mercy of the buyer at the very season when others are crowding their wheat upon the market. The obvious remedy is for the small farmers either singly or in combination to build store-houses. Tall elevators are not necessary, as the so-called cheap "flat-house" will serve the purpose. This has bins sufficiently elevated to permit a wagon being driven under them when it is desired to draw out the grain. To fill them, the loaded wagons are driven up inclined planes of timber and plank.

But the entire system of exclusive wheat farming is temporary, and will ultimately give place to diversified husbandry. Already herds of Shorthorn and Black Polled cattle, draft, road and thoroughbred horses and Oxford Down sheep have been introduced and a foundation laid for breeding fine stock. Alsike clover and orchard grass succeed wherever they have been tried in the valley, and the success of alfalfa near St. Paul gives promise that this valuable forage crop may flourish in other parts of the Northwest. The large farms serve a good purpose in a pioneer region by affording employment to those who come without capital, and thus acquire both means and practical knowledge of the soil and climate at the same time. But as the population increases, they are being divided and sold in detail. There is unquestionably a grand future for this valley, with its teeming soil, energetic settlers, and in many respects favorable situation, in spite of the severe winters.

MOSS ON FRUIT TREES.

J. H. HALE, CONNECTICUT.

Moss is found most often on pear trees not in a vigorous growing condition or in moist, shady places. The moss is a sort of fungus growth, which is easily kept off by washing the trees with strong soap suds. This treatment promotes the growth of a smooth and healthy bark. If the trees are badly mossed over now, it will be best to take an old hoe and scrape off the thickest of the moss before washing the trees, and then wash them two or three times during the next two months. In the fall, after the leaves are off, spray the whole tree with the soap suds, repeating this again early in the spring; there is nothing like it to promote clean and thrifty-looking bark. At Elm Fruit Farm we make a borer wash for our peach and other trees, and it also answers the double purpose of keeping out the borer and keeping the bark clean and healthy. This wash is prepared by adding to a common bucketful of water two quarts of strong soft soap, half a pint of crude carbolic acid, two ounces of Paris green, with lime enough to make a thin paste that will adhere to the tree. If convenient, a little clay or fresh cow dung may be added to assist in making the wash stick. Apply it with a swab or brush about the base of the tree and in the crotches of the main branches. The rains will wash it down from time to time and the whole trunk will receive the benefit. In spraying the trees when not in leaf, I usually add a quarter of a pound or more of potash to each bucketful of soap suds, so as to make quite a strong lye. These washes cost but little and are of great value in the orchard.

UNPLUCKED CORN FOR THE SILO.

JOHN GOULD, OHIO.

It is perfectly feasible to preserve unplucked corn in a silo. The fodder is much better there than tied up in the field in stacks to weather until fed out. There is no economy in pulling off the ears. It makes no difference about the money or market value of corn East or West, so long as it is grown for home use. How to get this home-grown corn to the animals in the best and cheapest way is the question.

Corn for the silo is usually allowed to get mature, passing from the milk to the glazed stage, before cutting for the silo. The object is to get each stalk, by thin planting, to produce an ear of grain. At this period the grain has reached its highest development of food value, and at the same time is in a condition to be assimilated with the least expenditure of physical force. Each day's subsequent drying of this fodder increases the work of the animal in masticating and digesting it, and husking, grinding, steaming, etc., are resorted to for the purpose of assisting the animal to obtain what was readily available to him in the glazing stage. The same rule applies to the stalks; therefore we resort to the silo to preserve the succulence of the fodder. To husk, crib, grind and feed the meal cost labor and money fully equal to one-fourth of the value of the crop.

Now why separate the ear from the stalk? Let the two go into the silo together, and be fed without the labor of separation. The final object of separation is only to bring the two elements of feed together at last. The new way of filling the silo slowly, so as to develop heat to 125° before adding a fresh layer, enables us to preserve the food value of the grain free from acetic or vinegar acid, and to feed it in a more attractive manner to the animal than any meal ration, no matter how much trouble we may take to make the latter presentable. I made observations last winter among hundreds of silos, and the testimony of the owners was that under no consideration will they ever again husk corn to be fed upon the farm, when the silo, with its later ideas of filling, preserves the grain so perfectly and gives such satisfactory results. It may be well to husk some corn for the hens, and for a few other minor wants for the farm; but for cattle, hogs, sheep and goats the farmer with a good wooden silo, that preserves ensilage as no stone silo can, has no occasion to husk corn for stock, save in a limited way.

APPLE POMACE AS A STOCK FOOD.

J. H. DICKERMAN, CONNECTICUT.

My double-platform, knuckle-joint press stands over a basement cellar where the pomace is thrown from the cloth. It lies unprotected from the weather, and my cows and colts have free access to it. They did not acquire much taste for it until the pile had accumulated enough to heat and render the apple seeds soft. It then emitted a sweet and pleasant odor. About six weeks seemed to be required to produce this condition. When the cattle began to eat it they would remain at the pile about twenty minutes, and then, seemingly satisfied, would leave, returning two or three times during the day. Much of the pomace was wasted by treading it under foot, and a roof seemed necessary, with a base wall to prevent the stock from walking over it.

If apple-pomace ensilage is to be fed in winter, it must also be protected from frost. When it is thawed after freezing, stock eat it as freely as any food. After my stock have become accustomed to it, they eat at all times, but its feeding quality is much improved by fermenting. This process completes its cure. A silo is not neces-

sary, and yet it may be advisable for storage. When I remove the pomace for feed, I deal it out in a way similar to any other product, giving cattle what they will consume. I have tried keeping pomace in a mill where straw is used, but find it is impossible, as the straw admits air in the process of fermentation, which induces mould and decay. Straw must be discarded if one wishes to preserve pomace.

HAMPSHIRE DOWN SHEEP.

In the production of improved domestic animals England has surpassed all other countries. This has resulted from the fact that for centuries her farmers have enjoyed a ready and profitable market for their products which enabled them to gratify their natural taste for the improvement of their stock. The great number of varieties of all animals produced upon their little island has been owing to the differences in soils and situations which are

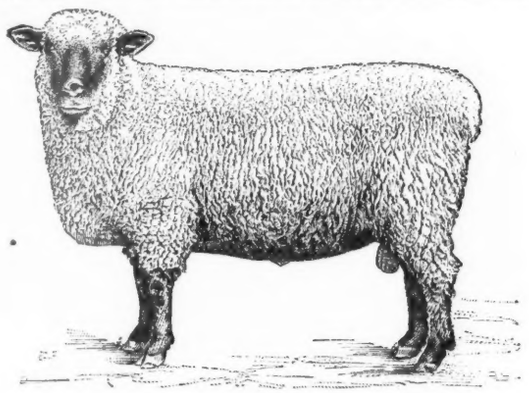


FIG. 1.—YEARLING HAMPSHIRE RAM CYCLONE.

there found, while the influence of these has been continued for generations by the strong local prejudices which have everywhere existed. These varieties are more striking in the breeds of sheep than in other animals.

The British farmer has given his chief attention in sheep raising to the production of flesh rather than of wool, because he had about him so many hungry mouths requiring food, while the wool for their clothing could be brought more readily from abroad. All these breeds of mutton sheep are good and each has its particular excellence. Of late years the Down breeds have taken the lead in public favor both in England and in this country. In point of age they stand in the following order: South Downs, Hampshires, Shropshires and Oxfordshires, named from the localities in which they originated. The South Downs and the Hampshires were neighbors in adjoining districts and similar influences molded their characteristics. As the chalk hills south of London run westward into Hampshire and Wiltshire the soil is deeper and more fertile and this has aided in making the Hampshire sheep larger and stronger than their ancient eastern neighbors. Their peculiarities are strongly marked and they stamp them with great force upon their offspring, whether pure bred or crosses. Their chief characteristics are strong, deep, lengthy frames, well covered with fine-grained flesh in which the fat is mixed with the lean and not laid on in separate masses, either outside or inside, where it is practically worthless; their wool is longer than the South Downs', and is of a good useful quality; their faces and legs are black and not gray; and they show great vigor as lambs and come to fitness for the butcher's block at a very early age. This last-named quality makes them especially valuable for the production of early market lambs, which always command good prices. We know of no higher authority upon this point than J. S. Woodward, secretary of the New York State Agricultural Society, who, at his farm near Lockport, is probably the largest early-market lamb raiser in the State. He has recently stated the following: "We have again this year raised lambs from South Down, Shropshire and Hampshire males, crossed on the Michigan Merino ewes, and we are more than ever pleased with the Hampshire as a sire. His lambs are stronger when dropped, grow more rapidly and get to a shipping size quicker, and, besides this, their faces and legs are more deeply colored, of a more uniform color than those from the South Downs even, and doubly more so than those from the Shropshires. Besides this, for growing lambs up for feeding when coming one year old, these grades show greater superiority, as they will weigh nearly twenty per cent more at one year than either of the other crosses."

The accompanying illustrations are from animals of the Braewold flock belonging to James Wood, Westchester Co., N. Y. This large flock is entirely composed of animals imported by Mr. Wood or which he has bred from his own importations. The illustrations are exact copies of photographs, and therefore contain both the excellences and defects of the originals. Such pictures have a real value, while those drawn to suit someone's fancy are worse than useless. Figure 1 represents the recently imported yearling ram Cyclone; figure 2 a typical ram and ewe of the Braewold flock.

BREEDING AND FEEDING THOROUGHBRED FOWLS.

MISS H. M. WILLIAMS, NEW JERSEY.

In breeding thoroughbred fowls, fancy points and eggs should be combined. To accomplish this may require two or three seasons, but it can be done nevertheless. Take Light Brahmas, for instance, which have the reputation of being poor layers and persistent sitters, especially high class birds; by proper feeding and careful mating they can be made far better layers than half breeds, and also non-sitters. Overfeeding is injurious to all breeds, but especially so to Light Brahmas. Corn should be excluded from their diet, except in extreme cold weather, when it may be given in a mixture of corn, wheat and oats as a hot mash in the morning. Oat-meal scalded and made the consistency of mush, into which a handful of dessicated fish may be mixed, is one of the best egg-producing foods that can be given. On alternate mornings, flaxseed meal may be used in place of the fish. A pint of whole wheat to every twelve fowls is sufficient for an evening meal, and this should be thrown among leaves or chaff to make the fowls scratch for it. Raw meat should be given three times a week. A head of cabbage, fastened to a string and suspended from the center of the poultry house, just high enough to make the hens jump for all they get, is an excellent thing. In short, any means which can be devised to make them work for their feed, with the exception of their morning meal; and even that should be light—simply giving enough for an appetizer will be found of greatest benefit to them.

A good rooster should have stout legs of medium length, yellow or reddish yellow in color, well feathered on the outside; toes straight and stout, with middle one well feathered. Head broad,

FIG. 2.—HIGHBRED HAMPSHIRE RAM AND EWE.

beak stout and well curved, yellow in color, with dark stripe down the upper mandible. Neck well arched, with abundant hackle flowing well over the shoulders, with a perfectly distinct glossy stripe on each feather, tapering to a point near the end. The tail should be carried upright, with short, spreading, sickle feathers. Also an abundance of white fluff in the rear, which gives the bird a broad appearance behind. Such a rooster, having a long and vigorous crow, will give most satisfactory results in the breeding pen, even if the pullets are not fully up to the standard.

THE HOG HOUSE OF A WESTERN EXPERT.

LESLIE H. ADAMS, WISCONSIN.

The building, a perspective view of which is given in fig. 1, and the ground plan in fig. 2, is eighty-four feet long, sixteen feet wide, and twelve feet high at the eaves. On the north side is a lean-to ten feet high next to the building, and eight feet high at the eaves, reaching the whole length of the hog house. This is the corn-crib. It is three and a half feet wide at the bottom and four and a half feet wide at the top. One enters the hog house through a door three and a half feet wide (which is sufficient to allow a swill cart

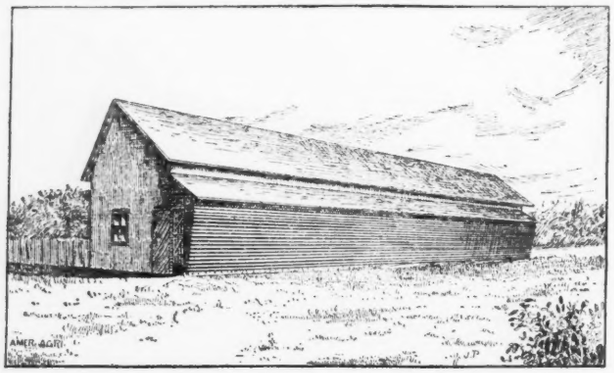


FIG. 1.—PERSPECTIVE VIEW OF PIG HOUSE.

to pass through if necessary), and finds himself in a feed or store room fourteen by sixteen feet. Here are large bins to hold ground feed, mixing barrels, and facilities for heating water or cooking feed. Passing on through another wide door the five-foot feeding alley is entered. Here are arranged ten pens, each seven feet wide and eleven feet long; they will accommodate seven hogs of 300 pounds weight, making seventy head, the total capacity of the building. At three different places in the wall of the side where the walk is, in front of the pens, are openings into the corn-crib. On the south side of the building a window is provided for each pen. There is also a small drop door two feet wide by two and a half feet high, which is raised or lowered from the feeding alley by means of a rope that runs through two small pulleys screwed in the ceiling, which is eight feet high. At the proper time feed is placed in troughs; the door is then raised and held up by means of the rope until the desired number of hogs have entered. It is then dropped and the next pen opened. This is a very simple and satisfactory device. It exerts a powerful moral influence on a man who has been accustomed to wrestling with a score or more of hogs over a pail of swill.

There are several doors three feet wide in all the partitions of the pens, as shown in the ground plan. This makes it very easy to change hogs from one pen to another, or to load them at the outer

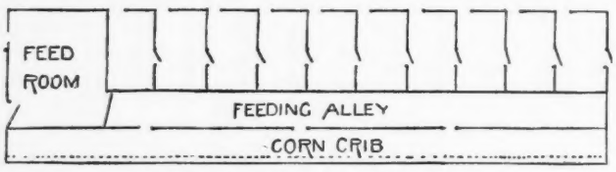


FIG. 2.—GROUND PLAN OF PIG HOUSE.

door. A small door two feet wide over the trough of each pen provides a means of entrance when the pen is to be cleaned out, or attention given to a farrowing sow.

In the rear or south side of the building, fences are so arranged that in a short time, by dropping panels of fence—which are kept on hand for the purpose—into grooves made for them, a yard is provided for each pen. This is another very practical and essential feature for farrowing sows, as the young pigs must be able to get on the ground and have an abundance of sunshine. The roof of the building is made so as to throw most of the water on the north side. A tin gutter on the south roof prevents the water from falling into the yards.

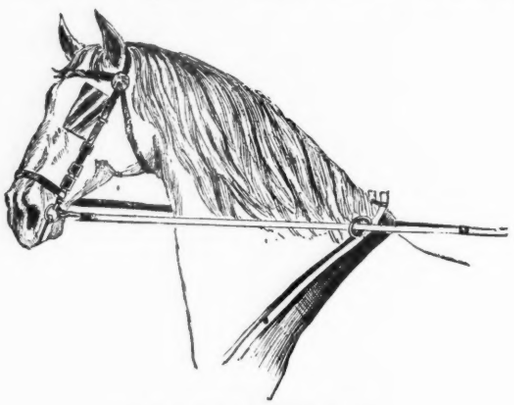
The above description is of the hog house on the farm of Theodore Louis, Dunn Co., Wis., one of the most successful pork growers of the West. The breeding of hogs is a specialty with Mr. Louis. He says that he "can't afford to divide his energies." His success is not alone due to the comfortable and cleanly quarters that he provides for his hogs, but also to the careful thought he exercises in feeding proper rations.

HOW TO KILL AND DRESS A FOWL.

To dress a fowl with the least trouble, hang it up by the feet so that it will drop a convenient hight, and attach a wire hook to the under beak of the fowl, to which hang half a brick. Sever the jugular vein with a sharp knife, and proceed to pick, holding the wings with one hand while you pick with the other. Work quickly. Get most of the feathers off the breast side with three or four hand pulls, and change the wings to the other hand held across the breast of the fowl, and with a few pulls get most of the feathers off the back. Grasp one wing at a time, and pull out the long feathers at one stroke. Then finish up the picking entirely before the fowl is taken down. When done, chop off the head, take a sharp knife and cut through the skin around the vent, being careful not to sever the intestine. Pull gently, and as the intestine comes out insert the forefinger and bring out the intestines rapidly, but do not break them. Get them out up to the gizzard, and break off there by the thumb and forefinger, and your fowl is ready for market. If you wish to make ready to cook, the hole must be slightly enlarged and the gizzard pulled out, cut open, and the inner lining removed, with all gravel, food, etc. A slit must be made in the breast and the crop removed, which should be empty when the fowl is killed. Some people remove the lungs. It is not necessary. The heart should be removed and washed, as some clotted blood is usually around it. The operation of preparing a fowl for market can be done by an expert sometimes in three minutes.

REIN FOR A LEADING HORSE.

James S. Rude, Orange Co., N. Y., furnishes us a sketch and description of a rein, which is shown in the accompanying illustration. Instead of two reins, which, with those of the wheel



REIN FOR A LEADING HORSE.

horses, would make four to handle, he uses a single rein, long enough to reach from the driver to the bits of the leading horse, running through a hame-ring, with a strap from the other side of the bit stretched on directly over the horse's shoulders. A straight pull on the rein holds the horse steady, and when it is desired to turn to right or left the driver gives a slight jerk in the contrary direction, accompanied by the word "gee" or "haw." The horse very soon learns to obey the touch of the rein and the word of command. This is similar to the "jerk rein" employed from time immemorial by teamsters in the cities of the Ohio and Mississippi Valleys.

A Japanese School Book.—Japan sent over to the great Centennial Exhibition in 1876 a number of commissioners, mostly young men, who for intelligence compared favorably with those of any other nation. Their section of the Exhibition included the apparatus and the books in use in the public schools of Japan. Among their books was one that especially interested me. It contained a cross-section and a lengthwise-section of every tree and woody plant of Japan, all cut exquisitely thin, and fastened to the pages of the book, with their native names in both Japanese character and English equivalent; and the botanical names, according to our system, were given. The Japanese are regarded as heathens, but what other nation in the world has such a school book? When the Exhibition was over, the commissioners gave me this book, which I highly value. THE DOCTOR.

A BARN FOR TWO HORSES.

The plans given herewith represent the stable and wagon house of James M. Place, Columbia Co., New York, who has found its general arrangement convenient in use, and sends these sketches as a matter of interest to our readers who may desire a structure of this kind. The dimensions of the barn are twenty-four by forty feet, with fourteen-foot posts. The wagon house is on the north side of the building; of course it may be on the opposite side as well, if more convenient, provided that the relative proportions

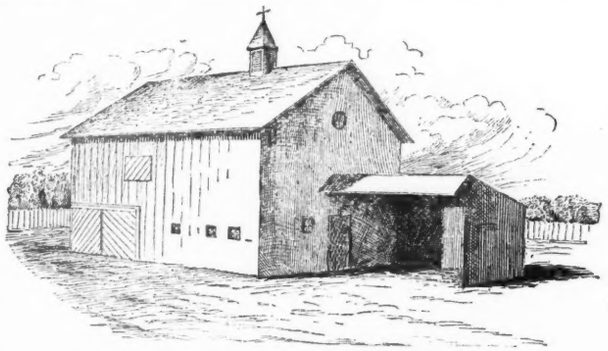


FIG. 1.—PERSPECTIVE VIEW OF TWO-HORSE BARN.

are maintained. The wagon floor is made large enough to hold three rows of wagons. If only two are sheltered, the remaining space may be left vacant in order to drive in with a wagon; unharness the horse and take it directly into the stall without going out of doors and around to the side door under the shed. The perspective view, fig. 1, gives a good general idea of the appearance of the barn and shed attached. There are two stalls, each five by fourteen, as seen in fig. 2, and room for the storage of bedding ten by twelve, a box stall ten by ten, a granary six by ten, and a harness room eight by ten. Between the stalls and the end of the barn is a stairway to the loft, and a pump for direct water supply. This pump connects with a cistern beneath the floor. Any and all of the rooms can be entered from the stall. A sliding door four feet wide closes the harness from the stall and the wagon house. The manure is to be thrown out of doors under the shed in the barnyard. The ventilation of this barn is secured by windows and doors which may be partially screened by wire netting to prevent the ingress of flies and other insects. The doors may be divided crosswise so as to allow the upper half to be left open to admit light and air.

CARE OF SWEET POTATOES AND ONIONS.

JAMES K. REEVE, OHIO.

The principal requisite in keeping sweet potatoes is to store them away absolutely free from bruises or cuts. To accomplish this, plow out one side of the row and throw out the bunch of tubers by plunging the spading-fork in at the opposite side. As soon as they are dried, sort carefully, rubbing them as free from dirt as possible, and put such as are to be stored away at once into the boxes or barrels where they are to remain. Lay them in by hand;

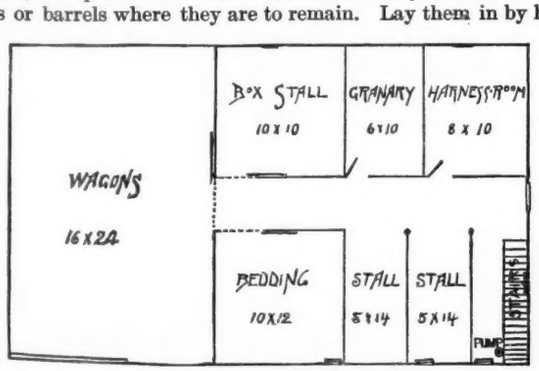


FIG. 2.—FLOOR PLAN OF BARN.

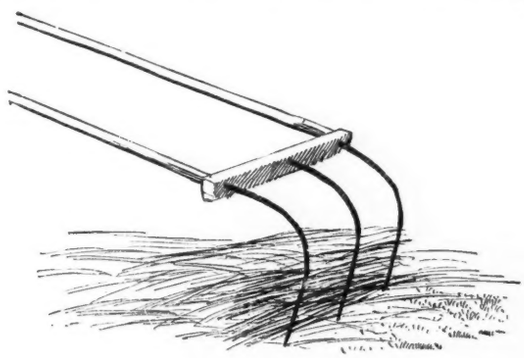
do not pour them from baskets. Then lift the packages into the wagon, and when arrived at destination lift them out without tumbling or rolling and set them down as carefully as if they were barrels of eggs. This is less trouble and expense than to pack them in sand, shavings, or cotton-seed meal, and serves the same purpose. The reason why sweet potatoes are so difficult to keep is that they are so rich in sugar, containing as compared with the common potato nearly seven per cent of soluble sugar, in place of a similar amount of starch, and whenever the cuticle is broken the omnipresent spores of fungi take root and rapidly produce discoloration and dry or wet rot. The best place for storing is a cool, dry, well-ventilated room where the temperature may be kept between forty and fifty degrees Fahrenheit.

Last year, having one sweet potato ridge, about six hundred feet long, left after setting the last plants, I opened a drill along the top and sowed carrot seeds in it. When harvest time came I plowed down one side of the ridge and threw out the carrots easily with the fork, instead of searching for them deep down in the bowels of the earth. The long, smooth, well-shaped roots obtained determined me to try the same method for the entire crop this year, and present indications are that I shall not be disappointed at the result.

In gathering the onion crop, unless the stand is much evener than most people secure, there will be a quantity of bulbs too small for market and too large, apparently, for sets. It is sometimes a question as to what disposition shall be made of these latter. Having a quantity of them on hand last spring I used them for planting my earliest onion bed, and almost as soon as the new growth commenced, they were ready for marketing as green onions. They came in very much sooner than those grown from the smaller sets, and consequently brought the best prices. A neighbor came over as we were gathering the last from the bed of five square rods, and suggested that "he guessed in the long run hogs and corn would pay better than onions." So taking out my note book, I investigated the facts, and found that the five rods had yielded six hundred and eighty bunches, worth net $27.20, or at the rate of $870.40 per acre. This was as much as my neighbor could reasonably hope to secure from his sixty acres devoted to corn and hogs, and I think the cost of production was rather in my favor.

A HORSE-RAKE FOR BRUSH.

The illustration herewith shows a home-made implement devised by J. W. Corbett, of Schuyler Co., N. Y., who has used one in his vineyard with much satisfaction. It consists of a pair of



A BRUSH HORSE-RAKE.

shafts, the rear end mortised firmly into a piece of scantling three by four inches, and four feet long. The three teeth are of round iron an inch in diameter, the upper end of each heated and hammered square to keep it from turning, fitted into holes in the scantling, and made fast by a nut. With a horse in the shafts, it is used to rake up brush in a vineyard or orchard, and will effectually clean up twenty acres a day.

To Grow House Plants.—The soil must be rich for the perfect growth of house plants, and should be of a somewhat porous nature, or made so by the addition of fibrous soil and manure. Equal parts of well-decomposed stable manure and half-rotted turf make a good soil for most plants. If the temperature and moisture are right, and the plants do not grow satisfactorily, the application of liquid fertilizers, made by dissolving some fertilizer in water, will be useful. It may also be made by soaking a small quantity of stable manure, and watering the plants with the liquid once a week. Fuchsias should be allowed to rest, withholding water during August and September, if early blossoms are desired. They require a good deal of heat, from fifty to seventy degrees, the former at night and the latter in the day-time; and sunlight is also essential to success. PROF. S. T. MAYNARD.

THE FARMER'S UNHONORED FRIENDS.

PROF. J. L. H. BEAL, MASSACHUSETTS.

There still exist among farmers many hazy ideas as to what are their friends and what their foes in the animal world. That insects in general fall in the latter category is a very commonly received idea, but few being aware that some of our best insect-destroyers are themselves insects, and that certain of the predaceous and parasitic ones form the most efficient check to the increase of the noxious members of the class. The same uncertainty as to the true relations of birds and mammals to our agricultural interests prevails almost universally. There is probably no more beneficial wild animal living in America than the skunk, and yet from time immemorial he has been shot on sight, and dogged and hunted whenever and wherever he appears. It is true that his method of defense is unpleasant, but he never molests those who let him alone. His legitimate business, in which he does an untold amount of good, is digging up and devouring the common grub worm, the larva of *Lachnosterna fusca*, a pest to all grass land and a curse in strawberry beds. When eggs and very young chickens are left exposed he will naturally avail himself of this more abundant supply of food, and who blames him?

In the same way the true status of the birds of prey has never been fairly comprehended, or has been persistently denied. Hawks and owls have been shot and trapped whenever opportunity has offered ever since mankind began to keep poultry, and the reason given is that they catch young chicks. The same course of reasoning would justify a farmer in killing his cattle because they break through a weak spot in the fence and devour his corn; or in shooting his hens because they scratch up his lettuce-bed in the garden. The amount of damage sustained by the farmer from the depredations of the great family of field mice and their allies is not easily estimated, but the loss of a few chickens can be reckoned with accuracy, so that only one side of the account appears, while the credit column, which does not appear, is by far the heavier of the two. The birds of prey constitute the principal and almost only efficient check upon the increase of destructive vermin, yet bounties are offered by States for the extermination of these conservators of the farmer's crops.

What man or boy ever lets a snake escape if it is possible to kill it? Yet who of us can tell whether we are killing a friend or foe? We pursue the race remorselessly and do our best to exterminate it, but when asked for our reason or upon what data we rely for our justification, we have nothing, or at most very little, to say, as no extensive or systematic observations upon the food habits of snakes have yet been made.

The farmer has probably more cause to complain of damage from insects than anything else in the animal kingdom, and it behooves him, therefore, to know just where he can procure help in the destruction of these pests. One of Nature's most efficient checks upon their increase is found in the birds that are, with but few exceptions, the friends of the farmer, and should be encouraged and protected by him upon all occasions. Careful observations will confirm the above statement.

BOSTON BAKED BEANS.

HARRY ROOD, PENNSYLVANIA.

Strange as it may seem at first thought, Vermont is the only Eastern State that raises as many beans as it consumes. Large quantities of beans are sent East from California, but ten per cent of all those used in Boston come from Canada. France, Austria, Italy and Germany have sent beans to this country in the past, but at less than $2 a bushel none but the latter two countries find it profitable to do so. Should the price rise to $2.50 per bushel, however, we would be almost swamped with foreign beans. New England raises about 100,000 bushels of beans, and buys (principally from other American States) 500,000 bushels. Seventy per cent of all the beans brought to Boston from other States come from Western New York. These counties, once famous for their wheat crops, could not compete with the Western farmers. This competition and the ravages of the weevil drove these New York farmers into a new field—that of raising beans. One often finds farms where 200 acres are devoted to beans. Twenty, and sometimes thirty, bushels per acre are harvested.

The best pea bean is raised in Vermont. It is small, bright, and brings an extra price. Beans are classed as Northern, Eastern, New York Medium, Blue Pod and Yellow Eye. The Yellow Eye was formerly more expensive than the others, but it now brings about the same price. Lima beans also sell for the same price as do other kinds, and are always sure of a market, especially in winter. Last year over 83,000 barrels, or about 350,000 bushels, of white beans were brought to Boston. One firm on State Street handled nearly one third of these, while a single baker in the Highlands often orders 200 bushels at once. The prisons, houses of correction and other public institutions use large quantities of beans, as do also the army and navy.

W. K. Lewis of Boston received the first patent for canning beans, in 1877. They are canned with four to six ounces of salt pork in each can of one and one-half pints. Nearly all the baked beans canned in Boston are put up by one firm, which handles annually five million cans. These cans are retailed at from fifteen to twenty cents each. The canning firm sells them at $1.15 to $1.40 per dozen cans. Travelers find these Boston baked beans for sale in Constantinople and St. Petersburg—indeed, in almost all parts of the world.

HORSES IN HOT WEATHER.

The horse, under judicious management, can endure without suffering a very great degree of solar heat. The animal is believed to be indigenous to the continent of Asia, where, in a state of nature, it was exposed to an extreme degree of heat. Wherever the horse has been carried by man, his powers of speed have been most largely developed, under the influence of a genial climate. The warm air of Kentucky and of Tennessee has matured some of the greatest horses known to fame. The rigorous winters of northern climates stunt the growth and diminish the speed of horses without adding to their powers of endurance. The thirsty sands of the Lesser Sahara are continually being crossed by mounted Arabs, yet this weary land is not marked by the skeletons of horses. How is it then that Broadway was tainted more than once--many times more than once—this summer by the festering carcases of strong, well-built American harness horses? The answer is, the Arab is judiciously cared for; the Bedouin knows his value and understands his needs; many citizens of our favored land are more ignorant than an owl as regards the needs of horses. The most frequent fatal casualties occurred in July amongst the horses used in street cars and those in the service of the second-class express companies. The street car horses succumbed to overwork and the want of comfortable stabling; where they could at night recover from the exhaustion of the previous day. The poorer class of express horses died from many causes; they were overworked, badly fed; that is, their ration was of the most miserable quality; it was fed to them as they stood in the street; the unhappy animals gorged themselves with cold water, then bolted lean oats which it was under the circumstances impossible for them to digest and duly assimilate, and death under a broiling sun mercifully closed their sufferings. So far for city mismanagement and inhumanity. Now what kills, and far worse than kills—in that to live and suffer is worse than to die—the country harness horse, the drudge of the farm, the unrequited, long-suffering, faithful friend?

It is not so much overwork or scant keep, as it is the irregularities to which the animal is exposed. The long hours between feeding time, the short respite allowed for recovery after eating; for to the overheated tired horse, digestion is a labor; the weeks of comparative idleness when the system loses its tone, and then the sudden call on the full activity of the horse, when he has not been prepared for even moderate exertion. Colic is the most dangerous enemy in spring time of all horses, and especially of the farm horse.

The Game of Quintin.—In olden times there was a game or exercise with a quintin in great favor with young men. The quintin was a tall upright post, and on the top of it a cross-bar turned loosely on a pivot; one end of this bar was a flat board, while from the other end hung a bag filled with sand. The players, or "tilters" as they were called, were on horseback at some distance from the quintin post, and each carried a long spear. At a signal the first tilter would gallop towards the post at great speed, and just as he reached it would strike the flat end of the cross-bar with his spear. The bar would immediately swing round, bringing the bag of sand with it, and if the rider were not very quick he would get a smart blow on his back from the heavy bag. Each man tried this in turn, and the one who escaped the bag most often was declared the winner of the game. There is still an old quintin-post standing in Kent, in the south of England.

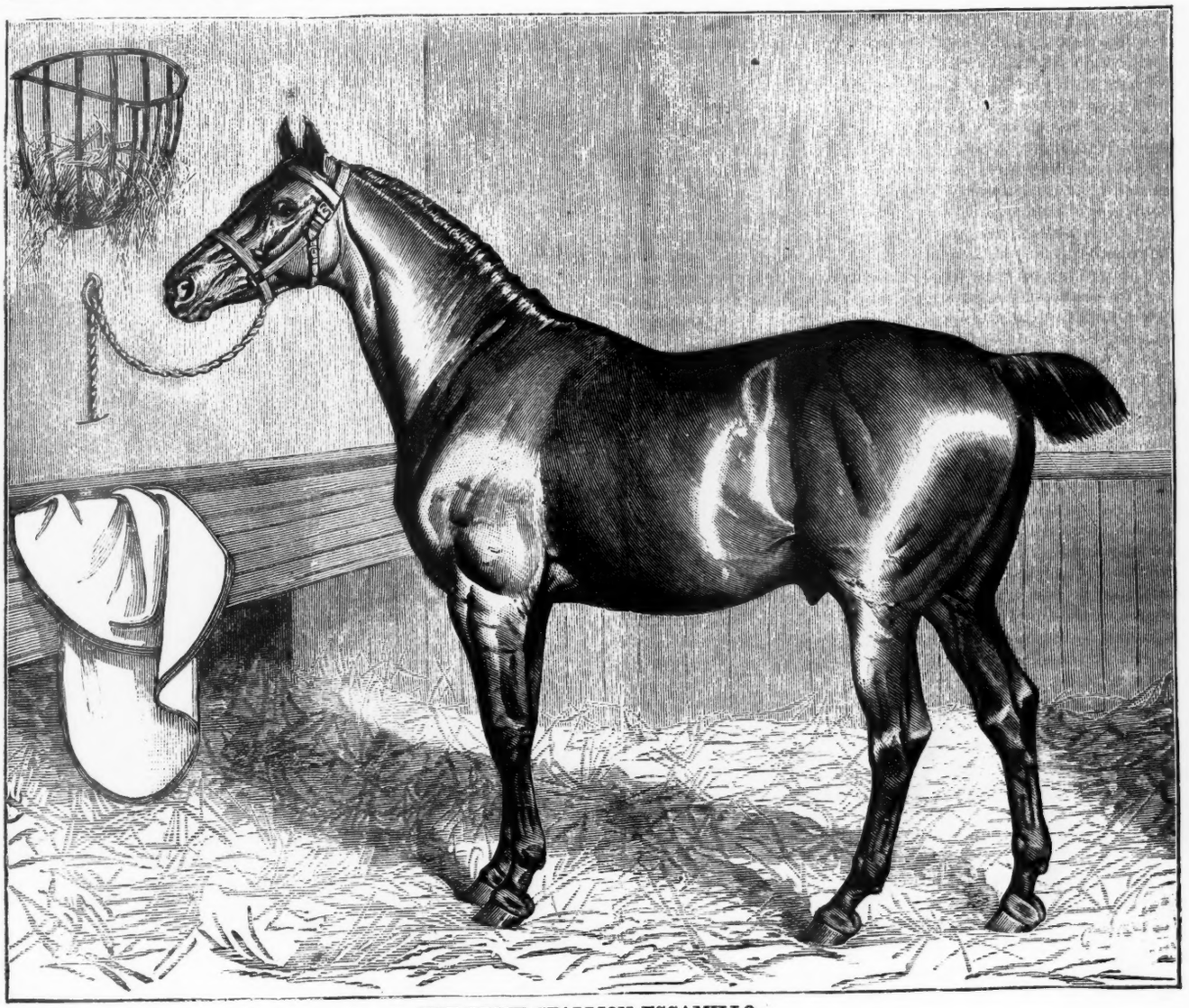
REMINISCENCES OF THE SUB-TROPICAL EXPOSITION.

P. W. REASONER, FLORIDA.

Among the objects favorable for drawing out questions was a specimen of *Agave rigida*, our native species, of the lower keys and coast of Florida, which, having blossomed in the building, was bearing upon its flower spike hundreds of "plantlets" of a diminutive size. It was carefully and plainly labeled; and yet, after reading the label and looking at the plant, most people usually asked of the nearest person if "that was a century plant," although there were well labeled and large specimens of *Agave Americana* in the building, too, with both botanical and common name given. If the answer was in the negative, the question often came, "Well, it's *some cactus* almost like it, isn't it?" Several times, too, we were asked if it "was not a *night-blooming cereus!*"

One day we saw a party of Northern ladies walk by a bed of our native Florida ferns; there were *Nephrolepis exaltata*, the sword-fern so valued in some conservatories at the North; *Polypodium aureum*, the golden polypody of our palmetto trees; *Polypodium pectinatum*, *P. Phyllitidis*, the beautiful tropical Hart's-tongue fern, with simple, lanceolate green fronds, and several other species. "Hm—m, ferns," we heard them murmur, "but I don't see anything choice; all these grow in our woods in New York." This was emphasized by a satisfied sweep of the hand, and they were gone down the border wondering why it was that a banana, transplanted about three weeks before, did not "look flourishing."

For years there has been a large variety of shaddock grown in South Florida, called by some of the old "crackers" (who never saw a bread-fruit tree) a "Bread-fruit." One day a specimen of this shaddock appeared in the Polk County display, with accompanying blossoms and leaves, and with a label "Bread-fruit and flowers, grown in Polk Co." Of course the label should have been changed at once, but with a hundred other things perhaps equally necessary to do at the same time, the Commissioner did not get it off before the eye and note-book of the reporter had fallen upon it. He was told by the Commissioner that it was not the true "Bread-fruit," but a kind of shaddock so misnamed by some, but Bread-fruit went down in the note-book. He was expostulated with by another, who said that more harm was done to Florida by such misrepresentation than in any other way; but in the next morning's paper there was a full paragraph in regard to the Bread-fruit tree of the Tropics fruiting in Polk County. There is not a bearing specimen of the stately Bread-fruit tree north of Cuba. It is the easiest thing in the world to be inaccurate if one does not take pains to be accurate.



THE PRIZE STALLION ESCAMILLO.

Drawn and Re-Engraved for the American Agriculturist.

ESCAMILLO.

Our illustration, re-engraved from the English *Live Stock Journal*, represents one of the most famous winners of queen's premiums. He is owned by Lord Middleton, and was bred by Mr. Joseph Pickersgill, in 1882, from Bonny May sired by Pero Gomez. He is of brown color, big in the body, and short in the leg, with plenty of bone. Escamillo is said to be one of the shortest-legged and most cobby blood stallions in England. His remarkable compactness gives him the appearance of a smaller horse than he actually is. He stands 15.3½ and tapes 8¼ inches below the knee. Stallions of this build are free from the objections frequently made against thoroughbreds for farmers' use. Escamillo is certainly a noble specimen of his type, as every lover of a fine horse can see.

FOREIGN BEES AND THEIR IMPORTATION.

SAMUEL CUSHMAN, RHODE ISLAND.

Since the first importation of Italian queens into Austria, England and America, bee-keepers have shown much energy in their search for something still better. Long voyages have been taken to various parts of Europe, Asia and Africa, and the forests of Java and Ceylon, the home of the *Apis Dorsata*, have been visited in search of this famous race. A few years after the importation of Italians it was learned in Europe that the bees of the Island of Cyprus were a superior yellow race, and they were soon procured by leading European bee-keepers, who were loud in their praises. Several Americans procured some of this stock from these bee-keepers, and in 1880, when there was such an interest in them, and when news came of the good qualities of the Syrians, D. A. Jones of Canada started out in search of the new varieties and returned with one hundred colonies of Cyprian and Syrian bees. In 1881 an agent of Mr. Jones secured in Ceylon two colonies of the *Apis Dorsata*, but owing to exposure and overexertion while procuring them, he had an almost fatal attack of fever, and as he was unable to give the bees proper attention they died when near their destination. He describes them as being as large as hornets, beautiful and dangerous, and as building combs four or five feet in length, while a swarm consists of about one and one-half bushels of bees. Others have visited Cyprus, Syria and Egypt for queens, and for a few years an American (Frank Benton) has made this his business, and now has queen-rearing apiaries in Syria, Cyprus and Carniola, from which he supplies queens to bee-keepers in all parts of the world. They are packed to take long voyages in safety at the proper season.

We are now able, for a moderate sum, not only to obtain queens from Italy, but Cyprians from the Island of Cyprus in the Mediterranean, Syrians from Northern Syria, Palestines from the Holy Land, Egyptians from Egypt, and Carniolans from the mountains of Carniola, a small district in Southwestern Austria. Each race or variety has certain qualities not found in the others, and from this list the modern bee-keeper may select his breeding stock and combine whatever qualities he may require in his location, or for any special branch of the pursuit he may desire to follow. For instance, one who runs his colonies entirely for extracted honey, to do the best needs different stock from one who makes a specialty of choice comb honey only, while one who makes a business of rearing queens for sale finds certain varieties far superior for this work. Others who do not work for honey but simply for increase of swarms for sale, may do best with still another strain, and again, the one who combines these branches wants the best all-purpose bee. Certain varieties do the best in the South; others are most desirable in the North. In some locations, very early and heavy honey flows are the main reliance; in others, the fall crop furnishes the only surplus; while in another place a moderate flow extends through the whole season. Therefore, each locality must be studied, not only to learn the special management required, but the race or strain of bees most adapted to it. My own bees, in four different locations, require different management in each apiary. A few miles may make a great difference. When there is a failure of the crop in one apiary, another differently situated may have a full yield.

NEW FACTS ABOUT THE CATTLE PLAGUE.

SOUTHERN CATTLE PLAGUE AND YELLOW FEVER, from the Etiological and Prophylactic Standpoints: By Frank S. Billings; Nebraska Experiment Station, Bulletin No. 3.

This is a pamphlet of 138 pages outlining both the work and the results of the author's investigations of yellow fever in man, and of Texas fever or Southern cattle plague, the latter being a disease which has been feared as being liable to destroy altogether the trade in live cattle between the North and the Southern Gulf States. Mr. Billings seems to have discovered the germ to which these diseases are due, and seems also to have demonstrated three very important and hitherto disputed facts regarding the cattle plague, namely: 1, the germ of the disease is not killed by an ordinary frost; 2, the germ is contained in the fœcal matter of diseased animals; 3, Northern cattle will infect one another. The importance of these discoveries comes of the fact that attention to their indications will enable veterinarians and stock men to stamp out, or at least decidedly lessen, the number of outbreaks of cattle plague. These facts may also work great changes in the treatment of yellow fever.

Mr. Billings is an enthusiast, and as such has not been as graceful as he might have been in alluding to the work of his contemporaries; nor has he exerted that scrupulous care which should always control the scientist in drawing from the writings of others facts with which to make apparent points that he and they may differ upon. The beauty of Mr. Billings' work is further marred by quibbles over the meaning of words; nor does the fact that he himself gives unusual definitions to these very words tend to atone for this captiousness. Nevertheless we congratulate Mr. Billings upon his apparently successful solution of a hitherto unsolved question, and trust that his claim of being the first American to discover a disease germ and place that discovery on a scientific basis may not be disputed.

SOUR APPLES FOR THE SOUTH.

Mr. C. M. Bell of Texas, who says he has taken the AMERICAN AGRICULTURIST for over twenty years, writes us:

"We have a fair apple country here, and we have as a marked success sufficient varieties to furnish an unbroken succession of apples from May 20th to April 1st, and in fact I have some Shockly and Danver's Winter Sweet on hand at the present time (April 16th) and shall probably have for the next two weeks—May 1st. Among the thoroughly successful varieties that we have here—that I name from hasty recollection—I would mention Red Astrachan, Early Harvest, Yellow Horse, Summer Queen, American Summer, Pearmain, Duchess of Oldenburg, Carolina, Red June, Holland Pippin, Maiden's Blush, Gravenstein, Pennock, Roman Stem, Buckingham, Yellow Bellflower, Wine Sap, Ben Davis, Shockly, Rome Beauty, Limber Twig, Lawver, etc.

"In the warm climate of Texas we are wanting apples more abundant in acids than such as we are raising here. As you are aware, the same variety of apples raised in Texas are not as sour as when raised further North, where the summers are cooler, shorter, and more cloudy. The Wine Sap is almost a sweet apple with us here, and so are the Roman Stem and Ben Davis. Our spring and early summer apples, such as Astrachan, Early Harvest, Summer Queen, and Holland Pippin, are acid enough, but it is the late fall and winter apples, that have borne the unclouded sun through the long summer, with deficiency of moisture, that become too sweet. Now will you please furnish me with a list of perhaps half a dozen varieties of late fall and winter apples that are the sourest you have?"

Mr. P. Barry of Rochester, than whom there is no higher authority, kindly gives us the following short list of good varieties having the greatest degree of acidity. Late Autumn Varieties: Maiden's Blush, Oldenburg, Gravenstein.—Winter Varieties: Newtown Pippin, Monmouth Pippin, Yellow Bellflower, and Rhode Island Greening. Mr. Barry also says: "I believe it is a fact that our Northern varieties of apples lose a portion of their acidity in Southern climates."

RYE AS A GREEN MANURE.

Many farmers are letting their sons use a portion of the farm for growing small fruits or vegetables. Such land as these young men usually have to work is very far from being in the condition of soil occupied for some years as a market garden and needs more manure than the farmer can spare. In such a case we have witnessed the effect of turning under a heavy crop of rye. The land is rather too stiff for working early in the spring. If worked before it is quite dry it is apt to bake.

After a crop of potatoes was taken off such a piece of land, rye was sown the last of August. The next spring, in May, an immense mass of green rye as high as the horses' backs was carefully plowed under. The land worked nicely, but the effect on the crop was not as beneficial as the gardener expected. But the following spring, in plowing up the land, he was surprised and delighted to find the soil in such a mellow condition. The plow turned up a great mass of decayed rye that looked like manure and had all the effect of manure, at any rate so far as the mechanical condition of the soil was concerned. By the aid of a few hundred pounds of commercial fertilizer per acre, he obtained as good crops on this land as he would have had from an application of a heavy dressing of stable manure. He thinks he has solved the question of how to carry on a farm-garden situated too far to draw manure from town. In other words, plow under rye and use commercial fertilizer.

There are other crops equally good and some better for this purpose, but rye is very convenient, as it can be sown at any time a plot of land happens to be vacant—from August to December. In August three pecks to a bushel of seed per acre is sufficient on good

mellow land, but later it is better to sow thicker, say one and one-half to two bushels per acre.

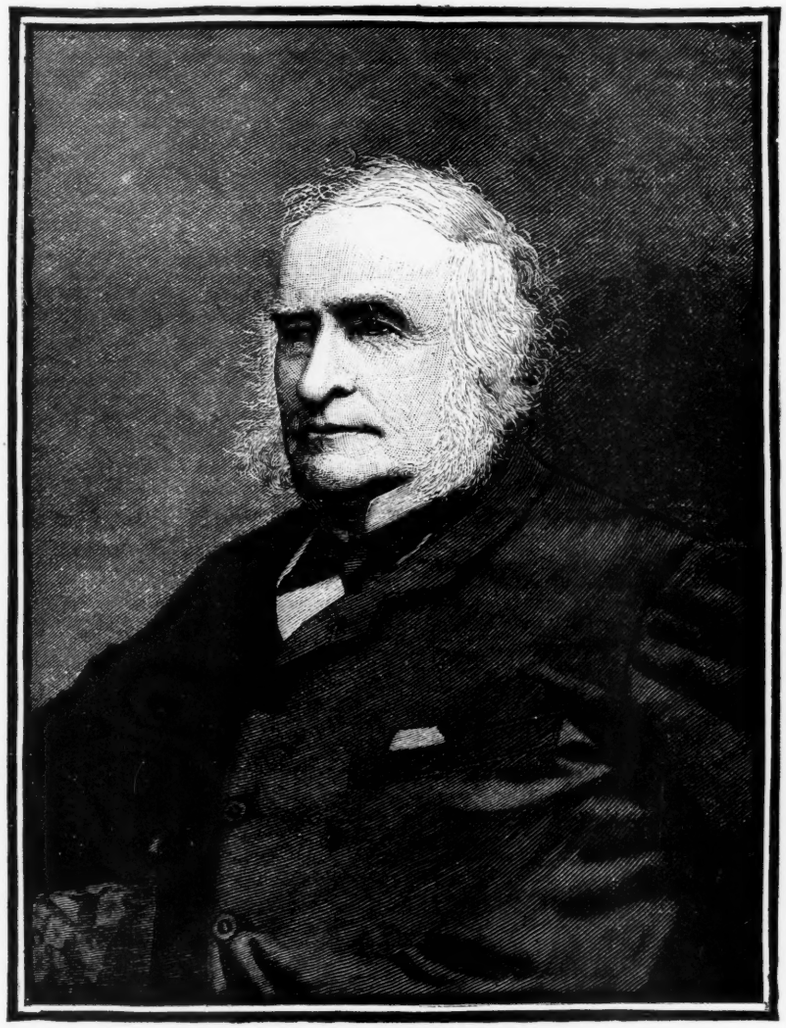
There is one pleasant feature of this method that commends it to all who love to see a neat, well-tilled farm. Instead of the land being covered with old potato vines, or rubbish or weeds, you have a fine, dark-green luxuriant crop growing all through the fall, winter and early spring months. If for nothing else, it pays to sow rye for looks!

WHAT SCIENCE HAS DONE FOR FARMING.

PROF. PETER COLLIER, NEW YORK EXPERIMENT STATION.

The first Napoleon declared that agriculture was the basis of all national prosperity. Everybody knows that when he set aside 1,000,000 francs annually for the establishment and maintenance of six experiment stations for the development of the beet-sugar industry alone, he laid the foundation of an industry which to-day controls the markets of the world in this important commodity, and which has reduced the cost of beet-sugar from forty to less than three cents per pound. Everybody knows that it was the ambition of Frederick the Great to make his realm the foremost power in Europe. One hundred years ago his sagacity led him to appropriate $32,000,000 a year for the development of the agricultural resources of Prussia, and this, too, when his kingdom was small and impoverished. Every new disaster was met by some expedient for strengthening the productive resources of the country. Just after the battle of Jena, when the territory of Prussia had been reduced to about half its former area, the famous school of Moeglin was founded. After the revolution of 1848, the department of agriculture was placed under a special minister. After the battle of Sadowa, the agricultural college of Leipsic was established, and $60,000 was given to provide scientific instruments and the appliances of instruction alone. To-day twenty professors in this institution devote their entire time to matters pertaining to agriculture. What are the results? A century ago much of Prussia was barren plains of sand, wild and absolutely unproductive; more of it was swamps and morasses, wholly given over to wolves and bears. To-day those sandy plains and those trackless swamps are the gardens of Europe. In the German empire alone, there are now 184 agricultural experiment stations wholly devoted to the development of what Washington truly declared to be the noblest occupation of man. In England one man established, and for forty-five years has maintained with a permanent endowment of $500,000, an agricultural experiment station at Rothamsted. It would take a day to recount the valuable service which this institution has rendered to English agriculture. In brief, it may be said that, within the past thirty years, the average yield of crops in England has been almost trebled.

To-day there is not a reasonable doubt but that with no increase of labor, but simply with increased intelligence, the agricultural productions of the Empire State may be doubled within ten years and the profits increased tenfold by the intelligent application of the work of its agricultural experiment stations, if they are liberally supported.



JOHN CHALMERS MORTON.

Drawn and Re-Engraved for the American Agriculturist.

Death of an Eminent Editor.—John Chalmers Morton, who died at his home in Harrow, England, May 3, was formerly associate editor of the *Gardener's Chronicle*, and from 1873 until his death was editor of the *Agricultural Gazette* (London), thus holding the most eminent position of the kind in Europe. His education, at the Edinburgh University, was especially in the sciences related to agriculture; he was also a proficient in mathematics. He was a man of wonderful industry, and besides his editorial labors he compiled and largely wrote the "Cyclopædia of Agriculture," a voluminous work of high authority in all that relates to British agriculture. He also contributed important papers to the Journals of the Royal Agricultural Society and of the Society of Arts. He served on several government commissions, notably that on the Pollution of Rivers, where his knowledge of all that relates to agriculture was of great value and was highly appreciated. He also prepared a series of agricultural hand books, in which the teachings of modern science are applied to the practical work of the farm. A man of profound learning, he was yet noted for his kind-heartedness. We reproduce from the *Agricultural Gazette* an excellent portrait of the man who has rendered such valuable service to agriculture.

The Devil Festival.—The people of China have an annual festival, held in September, in memory of their departed friends. The citizens of Canton and all the people of that region celebrate the feast with theatrical shows and pageants in their cemetery near Hsing Hua Chun, and for three days the roads are made very lively by the passing of the mule-carts and loaded vehicles of strange shapes and colors. These are filled with worshipers who carry with them clothes and money to throw into the large fires as offerings to the dead. It is believed that all spirits are set free at this time, and that even the Evil One releases his prisoners if their friends pray for them. This is called the "Devil Festival," and is said to have begun ages ago when the most wicked of all women was released from punishment in Hades through the prayers and tears of her son Mulen, whose life was the perfection of purity and devotion.

Putting the chicken coops under the plum and cherry trees is killing three birds with one stone.

The man who raises colts cannot afford to have a slow-walking or an ill-tempered horse on his farm.

Keep hoes, spades, forks, etc., in the oat bin. The oats prevent their becoming damp and rusty.

The cyclone lasts for but a moment, and you may build after it; but extravagance stops only at the grave.

OUR BASKET.

Our Basket is here to receive the letters, inquiries, and suggestions of our subscribers. The Editor desires every reader of the AMERICAN AGRICULTURIST to feel perfectly free to address the AGRICULTURIST upon any matter within its province. Our Basket is a generous one, and will welcome and accommodate not only the letters from our great army of American readers, but is ever ready for notes and questions from our large foreign contingent. It is no task but genuine pleasure to go through Our Basket,—to give help and counsel to our friends, and to receive help and counsel from them in their cheerful praise, kindly criticism, and interesting comment or suggestion. May these happy relations between the old AMERICAN AGRICULTURIST and its subscribers ever continue, and may thousands who have never yet written to us hesitate no longer but come early and often to "Our Basket."

Muck Land for Celery.—"I have a piece of black muck land," writes L. B. May of Oneida Co., N. Y., "the muck being from three to four feet deep and pretty wet in the bottom, though it dries a little on top. There has never been a crop on this land. Do you think it would be a good place for celery?" Certainly. But you had better not plant too largely the first year. Get the land ready. Plow it, the shallower the better, so that you turn over the sod. Then roll, and afterwards harrow and keep down the weeds and grass and make the surface fine and mellow. As soon as the sod is rotted plow again, and repeat the harrowing till the soil is as mellow as possible. There is no danger of making it too fine. Land of this kind that has never been tilled needs a good deal of work to prepare it for celery or garden crops; but it will pay for the labor. If the land is wet in the winter and spring, as is most likely the case, it may be desirable to plow it up into narrow lands five feet wide. The higher you throw it up and the deeper the dead-furrows, the drier and mellower will be the soil next summer. Sometimes such land is so full of large tussocks that it is a difficult matter to turn over the sod. If you are afraid to burn the tussocks, the next best plan, probably, will be to draw them off while dry, throw them into a heap, and mix them with layers of stable manure. When rotted they make excellent material for potting plants; or, if not wanted for this purpose, they will furnish valuable manure. Prepare the soil properly and you will have a piece of land for all coming time that will produce the best of celery, onions, carrots, cabbage, cauliflower, etc.; and if it is not wanted for these crops it will be profitable for hay.

Dynamite on the Farm.—Half a pound of dynamite placed upon the top of a large "hard-head" or boulder weighing anywhere from ten to one hundred tons will have a great effect. The rock directly under the cartridge will be as fine as meal, and the remainder so broken that it can usually be removed with a bar, or drawn out by horses, and put into a wall or otherwise disposed of. A rock that would cost ten dollars to remove in the old way can with dynamite be broken up for fifty cents.

Ensilage in Stacks.—J. R. Anderson, Portage County, Ohio, inquires if green fodder has been preserved in this country in its green state without the use of silos. Yes; ensilage was stacked, last year, at the New York Experiment Station, but it did not turn out very satisfactorily. It was explained, however, that the circumstances were not such as to make a fair test. In England, the system of stacking green grass, millet, clover, etc., in compact piles firmly trodden down, is meeting with considerable favor. It is claimed that if the stack is compressed by weights on the top, or by means of a cover compressed by a chain and ratchet or similar contrivance, so the air cannot penetrate the sides more than an inch or two, the ensilage keeps perfectly inside, and that the loss on the outside is not as much as the annual charges on a silo.

Plums for the East.—Hon. P. M. Augur, State Pomologist of Connecticut, replying to the inquiry of an AMERICAN AGRICULTURIST subscriber in that State, says: "Spring is altogether the best season to transplant all stone fruits in latitudes north of New York City. A good list of plums is Lombard, Quackenboss, Bradshaw, Reine-Claude, *Niagara, Pond's Seedling, German Prune, Imperial Gage*, Coe's Golden Drop, and for cooking, Shropshire Damson. Those in italics are said to be less subject to black-knot, but not wholly exempt in all places."

Millions for Dogs.—D. G. Porter, a Connecticut subscriber, thinks that dogs are not only wicked but wasteful. He writes: "We have probably about 2,000,000 dogs in this country, most of them unregistered. Ten cents a day each would not be too high an estimate for their keep; indeed twenty-five cents would be nearer the mark in a good many cases. But seven cents a day would make over $25 a year. Here is $50,000,000 a year that we spend on dogs for their keep alone; and the damage they do in preventing sheep-growing over large areas that are fit for nothing else, and in eating up just the food that would make the hens lay, would be moderately estimated at another $50,000,000. This makes $100,000,000 a year almost wholly uncompensated, to say nothing of the many cases of horrible death from hydrophobia which annually occur."

A Boom in Donkeys.—There seems to be a fashionable craze just now for the possession of donkeys; and the breeders of Tennessee are alive to the occasion. A few weeks ago no less than forty-eight of these placid beauties were brought over in a sailing bark from Barcelona, Spain —true Spanish Dons every one. They were all Jacks and well-grown; lank and somewhat tattered after their long ocean voyage, yet comely and trim. The Spanish donkey is a much stronger animal than the Mexican "Burro." Our readers may remember that in April, 1887, a consignment of these little creatures was made to New York, and so anxious were the heads of families to possess them that the bidding was active and the prices realized almost fabulous; the range was $40 to $105 per head for these tiny descendants of the starved and overworked African ass.

Utilizing Chamber Slops.—James T. Baker, Philadelphia, Pa., asks how to use chamber slops on flowers, shrubs, vegetables, and a young orchard. Chamber slops may be utilized either by throwing them on compost heaps, or, if immediate action is desired, by diluting them with four or five times their quantity of water, and applying to the plants the same as water. If used immediately before a rain, they need not be diluted.

Cotton Seed Oil.—E. B. Kreelage, the noted bulb merchant of Haarlem, Holland, in a recent report on some American industry, writes: "Vast quantities of cotton seed oil are shipped to Spain and Italy to come back to America labeled 'Pure Olive Oil.'" We are much interested in every new use found in cotton seed oil, but would have it used in its proper name. It is poor economy to pay Europeans for making our own products salable. The history of this oil is one of the most interesting in the applications of science and arts to agriculture. A few years ago cotton planters could dispose of but a portion of the seed as a fertilizer and as fuel, but there was a large surplus which they were glad to get rid of. Now the oil pressers pay them a considerable sum for every ton they have to dispose of. The introduction of this oil allows the soap-makers to give us a soap vastly superior to that they could formerly make from the fat of dead horses and the like. Within the past ten years great improvements have been made in its manufacture. Chemistry is bound to come to the help of agriculture in giving us perfect cotton seed oil, and we shall not be obliged to pay the Italians and Spaniards to show us how to do it.

A Good Word for the Runts.—A. A. Wood, of Washington Co., R. I., thinks it is not always advisable and profitable to discard runts. "Very often," he says, "our runts when fed by themselves after weaning make as handsome hogs as any in the litter. I think it a good plan to destroy them in a large litter, if the sow cannot accommodate them all; but if there is a teat for each pig, it is throwing money away to kill the runts."

Fruit Evaporators.—Both large and small evaporators for apples are made by the American Manufacturing Co. of Waynesboro, Pa. The Eastern Manufacturing Co. of 253 South 5th Street, Philadelphia, Pa., makes a small evaporator for use on a cook stove, the price of which is only a few dollars. The Zimmerman Machine Co. of Cincinnati, O., makes a larger apparatus. These evaporators are also used for drying all kinds of fruit and many vegetables, especially sweet corn. You can get with most of them an attachment for bleaching by the sulphur process, but we do not advocate that system, believing it to be unhealthy. Our readers interested in utilizing their surplus fruits and vegetables will do well to obtain circulars describing these evaporators.

To Get Rid of Prairie Dogs.—Procure a quart of bisulphide of carbon and some round dry pieces of horse dung. Saturate a piece, set fire to it, roll it into the hole, and close up the mouth of the hole with a clod or anything convenient. It never fails, death resulting from suffocation. I believe it would be equally as good a remedy for ground squirrels and rats. A quart, costing sixty cents, will kill a hundred or more.—[Walter Holmes, Coleman Co., Texas.

Root Grafting.—Lewis C. Lorr, Whitman Co., M. T.: We are pretty familiar with the modes of root-grafting practiced by nurserymen, but never heard of any one making from forty to sixty grafts or stocks from one small seedling. It is far more likely that a one or two-year-old seeding will not make more than two stocks suitable for grafting than more, and some nurserymen graft only on the crown, throwing away the long perpendicular or tap-root below. Root-grafting is the general practice among nurserymen, and if your trees failed to make a good growth it was probably due to some other cause than the mode of propagation. There can be no better stocks for the apple than strong young seedlings, and as long as nurserymen use only the central or main root for stocks, we have no objections to dividing this into pieces four inches long, as stated in the book to which you refer.

Fertilizers for Fruit.—E. A. Trout, Licking Co., Ohio, inquires: "1. Is there any way to determine what fertilizer is needed for fruit without an analysis? 2. What is lacking in upland soil upon which black walnut and hard maple have grown for thirty years? 3. Will superphosphate lose its strength by lying on the surface of the ground a few days before it is worked in? 4. How much per bushel are unleached ashes worth as fertilizer for small fruits?" 1. No; but in a general way fruits have no special wants, and need only such fertilizers as are good for other crops. 2. If the dead leaves have been allowed to lie where they fell beneath the trees, there is nothing lacking in the soil. 3. No. 4. No arbitrary price can be named, as it depends largely on the ever-changing condition of the markets for fruit.

Reducing Bones.—R. M. Lawson, of Tazewell Co., Va., finds it inconvenient to reduce animal bones in a mill or by acid, and does not wish to calcine them. He desires information whether ashes or stable manure will reduce them sufficiently for application to fall seeding. We have frequently reduced bones by packing them in heaps of fresh horse manure or in the manure used in hot beds. A quicker method is to mix them with fresh wood ashes in large barrels or hogsheads, keeping them damp all the time. This will reduce them to a powder in a few months.

Pruning Grapevines.—John Bradley, Benton Co., Oregon, asks us when is the best time to prune grapevines. The vines may be pruned at any time after the leaves fall in autumn, until vegetation starts anew in the spring.

Plows and Cultivators.—A. C. Jackson, Monroe Co., Ga.: Sulky plows are becoming very popular in the Prairie States, but hand plows are still in a large majority throughout the North and West. Sulky cultivators are coming rapidly into use, particularly in the great corn belt. Disk harrows are used with great success on sod furrows, in preparing fall-plowed land the following spring, and for many other purposes. The only objection to them is their tendency to pack heavy soils under some conditions. For a general purpose harrow the "Acme" is one of the best.

Propagating Dogwoods.—F. Senderson, St. Louis Co., Mo.: The Dogwoods, such as the New Weeping and the Red Flowering, are readily propagated by budding on stocks of the common *Cornus florida*. The stocks should be planted out in nursery rows, and treated exactly as you would apple and pear stocks, budding them in August, or earlier if dry weather is likely to check the growth of the stocks before August. Sometimes late warm rains force the stocks to make a second growth, and when this occurs budding may proceed as usual; for all that is necessary is to have the bark of the stock peel or lift from the wood freely at the time of inserting the bud. A week of fair or mild weather is sufficient to insure a union between the bud and the stock.

Carbolic Soap.—San Suba, Texas: You say that you can procure carbolic acid at the drug-stores, but the carbolic soap sold at such places is too dear for common use in destroying small vermin infesting domestic animals, etc. Others have made the same complaint; besides, the soap usually sold is not strong enough for the purposes you name. You can make your own carbolic soap cheaply and of good quality. Get one pound of carbolic acid crystals, open the bottle and set it in warm water until the crystals are dissolved by the heat. Take ten pounds of common bar soap, shave it up and put it in a pan, adding just water enough to dissolve it; then add the carbolic acid and stir the composition thoroughly. Set away to cool, and you will have a supply of carbolic soap, and of a strength that will show immediate effect when used as a wash on mangy animals, or for killing lice and similar vermin.

Trees for Montana.—R. T. Wilson, M. T.: It is true that some kinds of trees will thrive in drier soils than others, but we fear that you will find it very difficult to find a species adapted to your desert soils, and where irrigation is not practicable. The quaking asp or aspen tree grows in cold regions, and at altitudes of ten thousand feet or even higher, but we have always noticed that at such elevations they were growing in slight depressions or low, moist spots in the mountain, and not on the dry ridges. The white oaks will thrive on as dry soils as any deciduous tree, and you might try some of the mountain forms or species in your region, but you must not expect that they will make a rapid growth without some moisture at the roots. The melting snows in spring may supply enough to insure a moderate growth.

Uses of Eggs.—The food contained in the egg has nearly all the elements necessary for the support of man. Eggs are admirably proportioned, they are palatable, they are concentrated and portable. The French masters of the culinary art claim that eggs can be prepared in more than five hundred different methods. Eggs contain phosphorus and sulphur. They are an excellent nutriment for children. The white of an egg is an antidote for the poison of corrosive sublimate, and from the yolk the Russians extract oil which has a wonderful repute for the cure of bruises and cuts. In France, in the clarifying of wine,

some seven million dozens of eggs are used in a year, and in calico printing and dressing leather for gloves more than three million dozens. Eggs which have survived their usefulness, and which indeed may be called decayed and thoroughly spoiled, and which once were dumped with city refuse, are now gathered and made use of by the manufacturers of Morocco leather. Perhaps the most profitable use to which the egg can be put is to raise a chicken therefrom, in time for the early spring season when "broilers" bear a higher price in the market than almost anything else. From the egg, through all the processes to which the chicken may pass, at every point there will be found profit for the farm, with careful and intelligent management.

The Excellent Agricultural College at Manhattan, Kan., sends to the AGRICULTURIST its new catalogue. That the college is appreciated is well shown by the attendance of 472 students, of whom 314 are men and 158 women. They come mostly from Kansas, sixty-seven counties of that State furnishing 437 students, and there are thirty-five from fourteen other States. Besides these, thirty-one applicants for admission were refused. The average age of the students is nineteen and a-third years, —just the age for them to receive the most benefit from such an institution. The course of study and the whole spirit of the college are commendable.

Apricots in the Middle States.—Apricots are slow of bearing, usually. Sometimes they fail to pollenize well, but when they do they are often destroyed by the curculio. Examine the flowers and see if they are perfect; if not, graft over to some other kind. Should they set well, prevent attacks of the curculio by spraying with some offensive mixture at frequent intervals. Apricots are not usually raised at a profit this side of the Rocky Mountains, at least in Northern latitudes.

To Clarify Sorghum or Beet Sugar.—Replying to the inquiry of a correspondent of the AGRICULTURIST, Dr. Peter Collier, a foremost authority, says: "The best method at present known to clarify the juices of sorghum or beets before they are evaporated, is by means of lime and heat. The lime should be in the form of whitewash, and should be added to the juice until it is made faintly alkaline, and it is better to add too little than too much. After the addition of the lime and constant stirring, the juice should give a purple color to litmus paper, not a blue iron-red. Then the juice should be heated just to the boiling point, but not boiled. The heavy scum should be removed, and after it has settled about half an hour, for, say 200 gallons of juice, the clear juice may be drawn off from the sediment, and should be rapidly evaporated, with necessary skimming, to syrup. The separating of the sugar from the molasses and the refining of the sugar cannot be done economically, except upon a large scale and with expensive apparatus and outfit. The separation of the sugar, called purging, is done in the centrifugal machine; and the refining by again dissolving the sugar and filtering it through bone-black, after which the thin syrup is again evaporated in vacuum pans."

Plantain on the Lawn.—How can we get rid of it? ask several subscribers. There is but one satisfactory way, and that is total eradication. The plantain is a hardy plant, and any application strong enough to kill plantain would injure the grass. Therefore, when the plantain are up enough to get a good hold of, pull and cut out every one, and as often thereafter as they appear. Unless the ground is full of plantain seed, you will soon see the end of them.

Scrap-Books for Farmers.—Any ordinary octavo book or volume of good size that is of no particular value may be utilized as a scrap-book. Cut out every alternate leaf, and from the back take all the leaves, leaving a sufficiently long stub upon which to attach blank sheets for the index to be written upon. Clip from the daily and weekly papers all matters of interest, paste them in the book, reserving a few pages for the same subjects, so as to keep similar information as compactly together as possible. Of course an indexed magazine like the AMERICAN AGRICULTURIST is never cut, but is preserved entire. But in ordinary agricultural and periodical literature, very much valuable information is forever buried, because of the inconvenience of preserving or of referring to it. A well-kept scrap-book utilizes this information, and if the book is indexed, any article can readily be found.

Nitrate of Soda for Peach Trees.—S. M. Hill, Accomack Co., Va.: Our experiments were on bearing trees. In connection with superphosphate and ashes, nitrate of soda is unquestionably a valuable fertilizer for peach trees. You should not apply it this fall. Wait till spring and sow it broadcast all over the surface of the land, as soon as the frost is out of the soil.

Plowing Under Grass Seed.—R. Henshaw, Richmond Co., N. Y.: We noticed the statement you refer to. A farmer sows half a bushel of timothy seed and six pounds of clover seed per acre on the surface and plows it in, and had a good catch. We do not doubt the fact, but think he would have had equally good results if he had plowed the land first and immediately rolled and harrowed and sown the seed on the newly-turned, fresh, moist soil and then covered it slightly by going over the field with a fine-toothed harrow or roller. The fact that half a bushel of timothy seed per acre gave a good catch when plowed under is not surprising. If four-fifths of the seed was covered so deep that it did not grow, the one-fifth that is near the surface where the furrows join would, or might, be sufficient to stock the ground.

Pasturing Meadows in the Autumn.—J. Miller, Bucks Co., Pa.: Timothy meadows are often seriously injured by allowing stock to run in them too soon after mowing. Hence many good farmers make it a rule not to pasture their meadows at all. We are inclined to think, however, that pasturing late in the fall when the meadows have four or five inches of good grass on them does little or no harm.

A Gloomy Outlook for Wisconsin Farmers.—Charles Irle, St. Croix Co., Wis., writes us: "The devastation of the chinch bug in our grain goes on all the time, and we were glad to see an article on this pest in the last number of the AMERICAN AGRICULTURIST. In this and adjoining counties the bugs appeared last year by the millions, ruining many farmers. I had one hundred and twenty bushels of wheat from eighty acres, good only for chicken feed, sixty acres not worth harvesting, corn entirely destroyed. If we have not more rain, wheat, barley and corn will be a failure again, and many farmers will become bankrupt."

Cabbage Bursting Open.—W. Keller, Bergen Co., N. J.: The cabbage "burst open" because they have attained their growth and the roots are still absorbing food from the soil. The remedy is to sell them; or if you do not wish to do this lift them partly out of the ground and thus cut off the supply of food and moisture from the roots.

The Red Polled Cattle are coming to the front in England as dairy stock, and American breeders of these cattle are much encouraged. During the year ending April 30, 1888, several English herds of Red Polls averaged fully as much milk as Shorthorns or Jerseys. The Red Polls' milk was remarkable for its richness, containing from 3 to as high as 6.80 per cent of butter fat. In one test it took only 10 pounds of milk to make 1 pound of butter. This cow was Bridesmaid 10th, owned by Mr. Lofts, and the test was made at the last Suffolk (England) Agricultural Show.

A Grand Variety.—We take pleasure in packing these two "Basket" pages "chock full" of interesting information for our readers. Just notice the extent and variety of matter which they contain this month, to say nothing of the rest of the paper.

Killing Prairie Dogs.—Moses Marshall, Cloud Co., Kan., writes us: "I have tried a great many remedies for prairie dogs, but to no avail, until I heard that bisulphide of carbon would kill them. I took cotton batting, rolled it into small balls and saturated them with carbon. One of these balls I dropped into each burrough and securely closed the entrance to retain the gas. The result was that not a single dog is left. The cost of the material is small, as one pound is sufficient for twenty-five holes."

The Tennessee Valley of North Alabama.—Our field products are grass, oats, rye, corn, sorghum, potatoes, tobacco, cotton, peanuts and various vegetables, and our chief fruits are apples, pears, peaches, grapes and different kinds of small fruits. The great forests of valuable timbers in this Valley have scarcely been touched. The averave temperature in summer is 74 and in winter 43 degrees. The Tennessee River is navigable from a junction on the Ohio River at Paducaha, Kentucky to Knoxville, East Tennessee, over 500 miles. This section is called the cereal belt of the Cotton States. The soil is of two distinct types. The light gray on the table lands is well suited to cotton and fruits, and the rich, dark loam of the valleys produces corn, oats and grasses abundantly. Clover is often seen four feet high in early April, and four hundred bushels of potatoes are frequently produced on a single acre. There is no desire on the part of the people to boom the Valley. Speculation is confined solely to the mineral hills and city and town property; but there is a desire that thrifty farmers should occupy the now idle lands, and convert them into useful farms. Farming lands within easy reach of railroads may be secured at reasonable prices, and buildings may be easily and cheaply constructed on account of the abundant supply of lumber. [E. O. Neely, Marshall Co., Ala.

Composting Manure.—G. M. DuBois, of Fremont Co., Col., asks us: "If I should dig a large pit and throw into it all my stable manure, slops, weeds, etc., then haul refuse from slaughter houses, such as blood, bones, etc., and throw that in, and finally add lime for a top layer, would the whole mass become rotted and serve as a desirable fertilizer?" If the mass can be kept sufficiently moist it would no doubt make an excellent fertilizer. Still it would be considerably improved if it were mixed with muck or soil. The larger bones will probably not crumble to pieces entirely, and will have to be reduced when the heap is drawn out. The bones may be easily pulverized by packing them in wood ashes and keeping them moist.

Agricultural Science.—Owing to the impossibility of naming a date convenient for meeting at Minneapolis, it has been decided to hold the annual meeting of teachers of agriculture and horticulture, at Cleveland, O., in connection with the meeting of the Society for the Promotion of Agricultural Science, and that of the American Association for the Advancement of Science. The first session will be held Monday, August 13, at 10 A. M., in the central high school building. Adjourned sessions will be held from time to time at such hours as may be agreed upon. The secretary, Prof. W. R. Lazenby, of Columbus, O., predicts a valuable meeting.

Nebraska.—"It cannot be denied that the farmers in our county" (Fillmore), writes a correspondent, "do not feel very jubilant over the prospect for corn. Nebraska has not had over ten days of good corn weather as yet (July 1) this season, though we have a very good stand. Corn is small and rather yellow. Oats are a fine crop, hay is good, pastures were never better and cattle are in fine condition. Hogs are doing well, with but little cholera. Potatoes promise well, apples and small fruits are better than usual, but we have no cherries or peaches."

Keeping Sheep on Shares.—George A. Hall, of Van Wert Co., O., writes us in reply to an inquiry in a recent number of the AMERICAN AGRICULTURIST: "I wish to state that the general rule here is that the farmer who takes entire charge and care of feeding and shearing a flock of sheep receives half the wool and half the increase of young lambs. This was my share of profit for some seven years, and it paid me well. This was on a 120-acre farm, one mile from a town of 5,000 inhabitants."

Too Much Rain in Indiana.—A. C. Bates, of Parke Co., Ind., writes us: "Our rainfall for June, 1888, was 4 3-5 inches. For June, 1887, it was 1 4-5 inches, the last 1-10 falling on June 7th, and to August 5th no rains, but 3-10 of an inch in July. This year we fear a repetition of too much rain. Corn is growing finely, and so are oats, potatoes, etc. Of potatoes we shall have an immense yield. Europe must not look for a market here. Cabbage is an abundant crop, and so are all garden crops. Berries are large in yield and size."

Potted Strawberry Plants.—Henry A. Compton, of Douglas Co., Ill.: The earlier in the season strawberry plants are potted, the better will be the crop of fruit next year. The usual method is to sink small pots of about two and a half to three inches in diameter into the ground where the runners would root if left undisturbed. The pots are filled with soil; the runners are then pressed into this soil and held in place with a small stone. If the soil is heavy the runners will hold their place without any aid. As soon as the pots are well filled with roots, which will be the case in two or three weeks, they are detached from the parent plant and then placed in a partly shady position. Keep them watered if the weather should be very dry, and in two or three days they are ready for planting in the open ground. Small pots can be had in most large cities for three or four dollars per thousand.

Tennessee Agriculture and Geology.—Mr. B. M. Hord, Nashville, Tenn., Commissioner of Agriculture of the State, has just issued a large colored map, showing at a glance the geological formation of each county, and giving in a concise manner much valuable information about the climate, soils, crops, mineral resources, etc. Those contemplating to change their Northern homes for milder climes will be glad to learn that this map may be obtained from the Commissioner free of charge, by remitting the necessary postage.

The Seed and Nursery Trades.—The American Seed Trade Association met in annual convention at Chicago, June 12, and elected these officers: President, G. S. Haskell, Rockford, Ill.; Vice-Presidents, J. H. Allan, Pictou, Ont., and H. W. Johnson, Philadelphia; Secretary, Albert McCullough, Cincinnati, O.; Assistant Secretary, F. T. Emerson; Executive Committee, William Meggat, Wethersfield, Ct.; John Fottler, Jr., Boston; S. F. Leonard, Chicago; S. E. Briggs, Toronto, and H. W. Wood, Richmond, Va. New members were admitted, making the present total, 105. The American Association of Nurserymen convened at Detroit, June 20 to 22, electing these officers: President, George A. Sweet, Danville, N. Y.; Vice-President, G. J. Carpenter, Fairbury, Neb.; Secretary, Charles A. Green, Rochester, N. Y.; Treasurer, A. R. Whitney, Franklin Grove, Ill. Both conventions spent much time on proposed reductions in postage rates on seeds, plants, bulbs, roots, and cions, which were earnestly advocated. Excellent papers on other subjects were read and discussed.

Wisconsin Farmers Combining.—The farmers of Wisconsin have finally joined hands with those of Dakota, Minnesota, Nebraska, Iowa and neighboring states in perfecting a State Farmers' Alliance, at a convention held in Baraboo, June 6. N. E. Moody, of Viroqua, was elected president and A. F. Sands, of Fairchild, secretary.

The Season in Minnesota.—Our friend, W. Hayman, writes from Goodhue County, July 1, that the season has been unusually cold and late, but the small grains look well, and if the chinch bugs leave it alone a medium crop will be secured. But little wheat is sown, barley being the principal grain. The late hot weather has brought the corn along nicely.

SELECTING AND SAVING SEED CORN.

JASPER N. DAVIDSON, INDIANA.

Carelessness in the selection and preservation of seed corn is one great cause of little profit from the crop. The most profitable day a farmer can spend in September is one devoted especially to the work of observing the following rules or advice derived from a long experience: Gather from the best part of the crop and always from standing corn. Choose from stalks that bear two or more ears and take only the topmost ear, provided it is well filled to the point with regular grains. Care must be taken to reject any which have been soaked or sprouted at the lower end by late rains. Select enough to allow eight bushels per acre for the intended crop, making due allowance for tops and butts. In a room which is perfectly dry (a plastered one is best), stretch wires from side to side near the ceiling. Take a ball of twine and cut in pieces two feet long, making a loop at both ends of each one. Place an ear in each loop and throw over the wire. If convenient, have a stove in the room and heat occasionally if the weather is extremely damp. Moisture in the cob and vermin are its chief enemies, and this plan effectually prevents both. A few days before planting, remove the twine carefully and put away for another year. Then remove the top and bottom grains, set the corn-sheller light, as the ears are very dry, and pass it through. Be careful to reject ears unduly shriveled or which show mould. A full stand of plants is insured by this method, which takes comparatively little time and relieves the mind of uncertainty.

GEORGE HARDING, WISCONSIN.

I have not failed to have a perfect stand of corn in ten years, which I attribute to my method of saving: Pick the best and earliest ears as soon as glazed, trace up and dry by fire heat. Most farmers

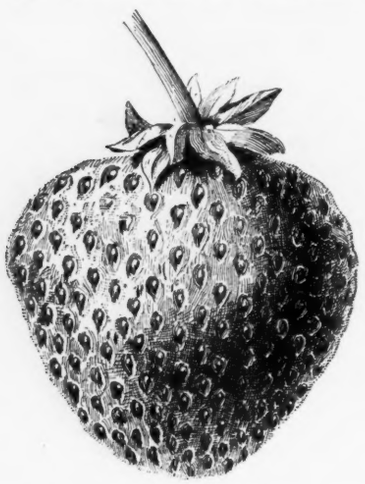


FIG. 1.—DAVIS NO. 10.

fail to have good seed by drying in an out-building; then the cob is not dry when over-hard freezing weather comes, followed by soft spells, which destroys a part of the vitality, so that if the corn starts it lacks vigor.

H. M. MERRILL, MINNESOTA.

Select the earliest ripened ears when perfectly ripe, gathering the same carefully by themselves, and discard any ear that has one discolored kernel, shelling from the tip of each all imperfect kernels. Remove the husks, except enough to tie together to hang upon a pole which is entirely removed from the sides of the granary, as when this is not done corn will "heat" sufficiently to destroy the vitality of the germ. When perfectly dry, or after cold weather is come, it may be packed in boxes—shelled or unshelled—and placed in a cool, dry room. There will be scarcely one kernel in many bushels that will not germinate.

DUDLEY W. ADAMS, FLORIDA.

Here we usually "slip-shuck" the corn, put in the crib and select the best ears for seed when wanted. In Iowa, I used to gather my seed corn as soon as glazed, or better still when in the dough, and hang in traces of eighteen to twenty ears in a dry and shady place until both kernel and cob are well cured, when neither cold nor confinement will hurt it. I decidedly prefer corn picked early, when still in the dough. It will speedily shrink (thus allowing the cob to dry fast), grows quickly, and the grain becoming soft so soon gives nourishment to the young sprout sooner than hard seed. Almost immediately after sprouting, the grain (having given up its nourishment to the plant) roots, and before the crows, squirrels or gophers can find it, it has lost its charms for them and is not troubled. Plant all the corn on the ear. You will get certainly as good and I think a little better crop than to only use the perfectly shaped kernels from the middle of the ear.

PROMISING NEW STRAWBERRIES.

At the recent strawberry and rose exhibition of the Farmers' Club of the American Institute, New York, a collection of seedling strawberries raised by J. J. Davis, of Warren Co., New Jersey,

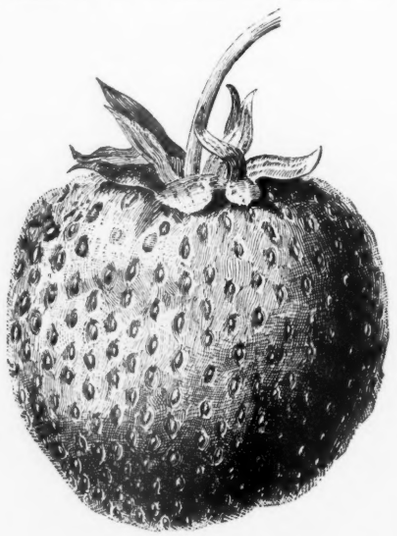


FIG. 2.—DAVIS NO. 20.

attracted a great deal of attention. The berries were from one year old plants and impressed us so favorably that we had engravings made of the most promising ones. All are seedlings of Davis Seedling, fertilized with either Crescent or Jersey Queen, and all have perfect flowers.

Number 10 (figure 1): Fruit large, very dark crimson, conical; flesh very dark, and of good quality; commences to ripen on June 13th. The plant is a strong grower, a good bearer, and its foliage is large and vigorous.

Number 20 (figure 2): Resembles the preceding in general appear-

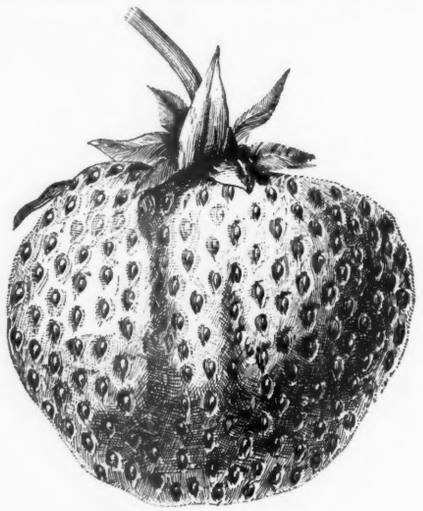


FIG. 3.—DAVIS NO. 25.

ance and character, but is larger and earlier, beginning to ripen its fruit on June 7th, and apparently it is firm in texture.

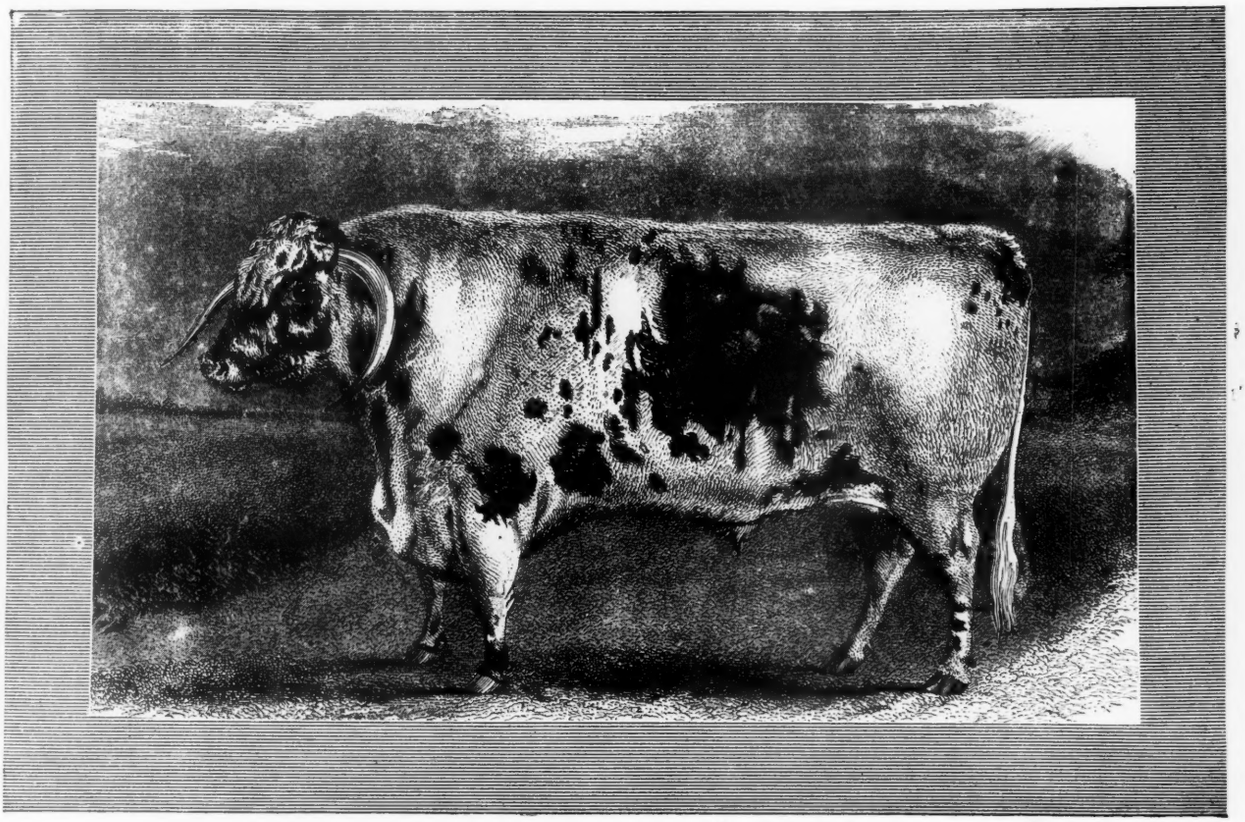
Number 25 (figure 3): Very large, irregular globular, bright scarlet, quality very good. Flesh firm and solid, rosy white. The foliage is very large and the plant is a remarkably strong grower. This variety has evidently a preponderating share of Jersey Queen blood. Our engravings, drawn from photographs, represent selected berries a little larger than the average size.

THE LONGHORNED BREED OF CATTLE.

One of the oldest breeds of cattle in England, and one of the earliest of those imported to this country, is the Longhorns, of which our illustration shows a typical animal. They are believed to have descended from a race indigenous to the British Islands, though this is disputed by some who claim Ireland as the place of their origin. However this may be, it is certain that the district of Craven, in the West Riding of Yorkshire, and the bordering region of Lancashire, was the earliest known habitat of these cattle. They were originally a loose-jointed, sway-backed, and coarse-boned race, until a scientific breeder named Webster, of Cauley, founded a herd of them and made great improvements. But the man who raised them to their greatest celebrity was Robert Bakewell, of Dishley, who also created the breed of New Leicester sheep from the coarse, long-wooled native race. Purchasing his foundation stock of cows and bulls from Mr. Webster, he inbred them with such skill and success that they attained a high degree of excellence. No breed rose more quickly or declined more rapidly. Bakewell kept his methods secret, and after his death the breed fell off in popularity, though it is still recognized as a standard breed in England.

In appearance the Longhorn is a stately beast, with long head, rather heavy shoulder, fairly well-sprung ribs, deep chest, long back a little swayed, with good loins, well-filled twist, rump and tail high. But the most marked characteristic is the horns, which curve horizontally or downward, in some instances forming semi-circles from the base to the nose. The colors are red or roan and white, with a broad strip of white on the back from the shoulders to the rump. The bullocks are good feeders, fattening easily, and the beef is fair. Their skins are mellow and elastic to the touch, and covered with a coat of soft, fine hair. The cows yield a fair quantity of very rich milk, and they are highly valued as dairy animals in the northern parts of England, both for producing milk and butter and to rear calves.

The Longhorns were brought to Kentucky and Ohio in 1817, and for several years were bred with much care. They were overshadowed, however, by the more popular Shorthorns, and never attained much public favor. They were crossed indiscriminately with the native cattle, and thus suffered to gradually run out in this country. Yet so strong is the blood, that for many years, and until quite recently, it was not unusual to see, among droves of cattle arriving in the New York market from certain parts of Ohio, animals distinctly marked with the characteristics of the Longhorn breed.



A TYPICAL LONGHORNED BULL.

OUR DAIRY PRODUCTS AND "OLEO."

If oleomargarine is to be made and used, and the law appears to be practically inoperative except in minor cases, the less of it there is consumed by our own people the better. During the last fiscal year and ten months of the present, the export of imitation butter was 2,030,000 pounds, and of oil, 78,296,000 pounds, a large advance upon the export of the period immediately preceding. The true dairy products find a rival in these bogus creations, and it is curious to note the range of the products. The imitation butter went to fifteen out of seventy-four countries, and more than half of it to Newfoundland and Labrador, the French islands at the North, and to the British and French possessions in the West Indies and thereabouts. The oil went to fifteen out of the seventy-four countries, six-sevenths to the Netherlands, and one-ninth to Germany. The butter was exported to fifty-four out of seventy-four countries, Great Britain, the British West Indies and Denmark taking nearly one-half of the whole export. Our cheese went to fifty out of seventy-four countries, nearly all of it to Great Britain and the Canadas. The cheese sent to Canada is forwarded to Great Britain mostly. A very curious fact in our butter export is that out of 12,531,000 pounds, 936,370 should go to Denmark, one of the great butter-producing countries of Europe, and a most important source of the supply of dairy products and eggs to England. Perhaps the brand is changed, and our butter goes to England as "Royal Dane."

Which Shall it be, Weeds or Useful Crops?—It will be one or the other, possibly a little of both, but always something. "Nature abhors a vacuum." In the garden fill every nook and corner with something useful or ornamental—it may be a cabbage, a hollyhock, a sunflower, or a compost heap. The latter is as necessary in a garden as a garret in a house. On the farm there are often places given up to weeds that a little time and labor would improve, and when once plowed and planted would become exceedingly productive, and instead of being an eye-sore would be pleasant to look at. If you cannot plow, at any rate cut the weeds and let the grass grow.

THE GROWTH OF WHEAT, AND ITS PRODUCTS IN THE MILL.—XII.

JOHN J. WILLIS, SUPERINTENDENT OF LAWES AND GILBERT'S EXPERIMENTAL FARM, ROTHAMSTED, ENGLAND.

ON WHAT DOES STRENGTH OF STRAW DEPEND?

It will be appropriate to refer here to the bearing of experimental evidence on the question whether, as is frequently stated, strength of straw is dependent on a high percentage of silica. The following table affords illustrations on this point:

Table Showing per cent Silica in the Ash and in the Dry Matter of Wheat Straw and Barley Straw grown by Different Manures and in Different Seasons.

WHEAT.		*Per Cent Grain in Total Produce.*	*Weight per Bu. Dressed Grain.*	*Per Cent Ash in Dry Matter.*	*Per Cent Silica in Ash.*	*Per Cent Silica in Dry Matter.*
Without Manure	1856	36.4	54.3	5.5	71.5	3.9
	1858	40.6	60.4	4.9	65.9	3.2
Ammonium Salts alone	1856	34.8	55.5	3.9	66.2	2.6
	1858	40.3	59.6	4.0	57.5	2.3
Mixed Mineral Manure	1856	36.7	56.4	5.7	68.7	3.9
	1858	43.6	61.5	5.6	64.7	3.6
Mineral Manure and Ammonium Salts	1856	33.6	58.0	4.9	64.6	3.2
	1858	38.2	62.2	5.0	55.6	2.8
Farmyard Manure	1856	34.5	58.6	6.7	69.6	4.7
	1858	39.6	62.6	6.5	59.7	3.9
BARLEY.						
Rape Cake	1852	44.3	51.7	4.8	57.5	2.7
	1871	45.4	56.3	5.5	42.0	2.3
Rape Cake	1856	39.1	46.1	4.6	49.4	2.3
	1863	48.4	56.3	5.2	45.6	2.4
Mineral Manure and Ammonium Salts	1852	43.2	51.4	4.2	62.2	2.6
	1871	43.3	56.5	6.7	32.7	2.2
Mineral Manure and Ammonium Salts	1856	40.2	46.4	5.5	57.5	3.2
	1863	47.3	56.5	6.3	35.2	2.2
Farmyard Manure	1852	47.0	52.8	5.2	57.4	3.0
	1871	43.8	56.6	7.6	42.7	3.2
Farmyard Manure	1856	42.8	47.1	4.9	57.9	2.9
	1863	48.3	57.2	6.2	43.1	2.7

The upper division of the table gives results relating to wheat, and the lower division corresponding results relating to barley. In the case of wheat five, and in that of barley three, very different conditions of manuring are selected for illustration, and for each condition as to manuring results obtained in bad and in good seasons are given. The particulars indicating the character of the crops are the percentage of grain in the total produce, and the weight per bushel of the dressed grain; and side by side with these are recorded the percentage of ash in the dry matter of the straw, the percentage of silica in the ash, and the percentage of silica in the dry matter. In the wheat in every case, and in the barley in every case but one, there is a higher proportion of grain in the better season; and in every case, of both wheat and barley, there is a much higher weight per bushel of grain in the better season. These conditions are, in fact, proof of the superiority of the crops in the main characters of seed-forming tendency and ripening. The percentage of ash in the dry matter of the straw is not a very significant character; and it is seen that in the case of the wheat it was on the average somewhat the lower, but in that of the barley uniformly the higher, in the better ripening and maturing seasons. The percentage of silica in the straw ash is more significant, and in both the wheat and the barley it is under all conditions of manuring much the lower in the better seasons. More striking still is the percentage of silica in the dry matter of the straw, and it is seen that, with the wheat under each condition of manuring, and with the barley under most conditions, it is considerably lower in the better seasons. It may be observed that the exceptions in the case of the barley were where organic manure, as in rape-cake and farmyard manure, was employed.

Direct analytical results clearly show, therefore, that the proportion of silica is, as a rule, lower, not higher, in the straw of the better grown and better ripened crops. This result is quite inconsistent with the usually accepted view that high quality and stiffness of straw depend on a high amount of silica. Pierre and Bretschneider have, however, concluded from their experiments that this is not the case, and at Rothamsted a contrary view has been long maintained. In fact, a high proportion of silica means a relatively low proportion of organic substance produced. Nor can there be any doubt that strength of straw depends on the favorable development of the woody substance; and the more this is attained the more will the accumulated silica be, so to speak, diluted—in other words, show a lower proportion to the organic substance. We may mention that in the Rothamsted neighborhood, where the straw-plait industry prevails, the complaint during several recent seasons of bad harvests was that an unusually large proportion of the straw was brittle, and broke in the working; and considering the character of the seasons there can be no doubt that this was associated with a low development of the woody matter in the straw and a high percentage of silica.

ERADICATING THE COCKLEBUR.

No weed is more troublesome than the cocklebur. Cultivation only increases its persistency; it is difficult to pull—its hold on the ground being so secure that the stem will part before the roots are detached—cattle, hogs and horses will not eat it, and it springs up and matures seed in a very short time. It reaches its greatest perfection on the fertile Western prairies. Only the greatest vigilance will eradicate it; and this vigilance is apt to be relaxed in the late fall and all the care and work of summer be lost, as the cocklebur is not easily frost-bitten, and will mature its seeds after the growth of nearly every other weed has been stopped. Each plant produces many seeds, and where one is allowed to ripen these in the fall, a space fifty feet in diameter will be infested with plants the next summer. On a farm in Western Illinois the writer has kept down every cocklebur in his corn-field until the middle of October, and in passing through the field to gather the corn early in November, has been disagreeably surprised to find enough mature plants to thoroughly seed the ground. The war on this weed must be continuous until very late in the season. If not a weed were allowed to go to seed, it would require several years to rid the land of this pest, as its seeds will lie dormant in the soil for many years. A little carelessness after several years of unrelenting warfare will put everything back at the beginning.

THE COMPETITION OF INDIAN WHEAT.

Prof. Robert Wallace, professor of agriculture and rural economy in Edinburgh University, Scotland, after four months' investigation of India the past summer, tells us that the fear of competition from this source has been largely exaggerated. He says it is a mistake to think that the Indian area in wheat will increase in the next ten years in the same ratio as it has the past five years. It will increase gradually, but the difficulties in the way will prevent any such development of exports as has caused so much alarm of late. The late rapid growth of the wheat crop has been due to the fact that much of it was produced on land previously occupied for some other crop. This substitution cannot go on much longer, for the teeming millions of that empire must have food to live on, and only in the newer parts of the country can the wheat area be much further extended. There are great difficulties of developing new sections in that country: First, because it is hard to get workmen to settle in new districts, and secondly, there is want of money and a want of the necessary extra supply of power. Again, since wheat requires reasonably dry land, failures must occur every few years in the moist climate of that country. A continuous growth of wheat on lands heretofore cropped with leguminous plants, such as clover, etc., is also tending to exhaust the soil, and the yield of wheat per acre is bound to diminish. Prof. Wallace concludes by warning people to beware of Indian wheat statistics, which are not compiled from returns made by practical wheat growers, and are based to a considerable degree on guess-work. This report from so eminent and disinterested authority will be of interest to every wheat-grower in America, as showing that Indian wheat is not to usurp the place of American wheat in the foreign market.

Training Tomatoes.—H. P. Johnson, Leavenworth Co., Kan., has found the following method of training tomatoes highly successful in a small garden, producing great quantities of very early and fine fruit; after the plant has become firmly established and has begun to throw out small shoots, he writes us, the training should commence. Stakes five feet in length and of the size of stout bean poles should be driven one foot in the ground, a few inches from the plant. Then remove all the small shoots that start from the main stalk, being especially careful to leave but one shoot at the top of the plant. The plant is then to be secured to the stake with any kind of coarse twine. The shoots should be pinched in and the stem tied at intervals of a foot until it reaches the hight of the stake, when it should be topped. On vines treated in this way none of the early fruit will be lost by rot, and in a small garden much space will be saved, as the plants may be set as close as three feet apart each way; it also improves the appearance of the garden, facilitates picking, and makes the passage between the vines very easy.

A COUNTRY HOUSE COSTING $3,400.

The plans given herewith were designed by Arthur L. Valk, architect, and are intended for a suburban residence or the home of a well-to-do farmer. As shown in the perspective view, fig. 1, the building stands on a slight elevation, so as to present its ornamental features to best advantage. There is a cellar under the entire building, and the frame rests upon a solid stone foundation. A veranda or porch extends the entire front of the house, and may, if desired, be continued along the dining room and kitchen. The outside up to the second story is clap-boarded; all above is shingled. The inside woodwork is finished in pine, and the walls are papered in first-class manner. The leading feature in the arrangement of the first floor, fig. 2, will be seen to consist in the large, nearly square hall, which is finished as a sitting-room, and is reached through a vestibule from the piazza. The large bay-window, in which a comfortable seat is arranged all around, admits of abundant light and gives the room a cheerful and home-like character; and the dining-room, study and kitchen are in direct communication with it. Between the dining-room and kitchen are large, convenient closets, and if the space indicated in the plan as a bath-room should not be desired for this purpose, it may readily be utilized for a store-room. The hight of the first floor is ten feet, except that of the study, which is but eight feet. The floor of this room is raised four steps above the sitting-room. The rear porch, directly connected with the kitchen, is a most convenient adjunct, and will be duly appreciated in hot weather by those in charge of the culinary department of the household. Another important feature in this plan is the earth-closet in the rear of the house. Designers of country houses in general give too little attention to earth-closets, without which no rural dwelling can be considered complete, unless water-closets and perfect sewerage can be introduced. The hight of the second story is nine feet. The plan, fig. 3, shows at a glance the arrangement of the rooms, all of which are light and provided with chimneys, so that they can be heated by stoves, fireplaces, or by means of Baltimore heaters on the first floor. There are three large bedrooms and one of smaller dimensions. Each room is provided with at least one capacious closet, and has direct communication with the wide and well-lighted central hall. An additional closet for linen is arranged at the end of the hall. The attic is left unfinished, but one or two rooms could be added here.

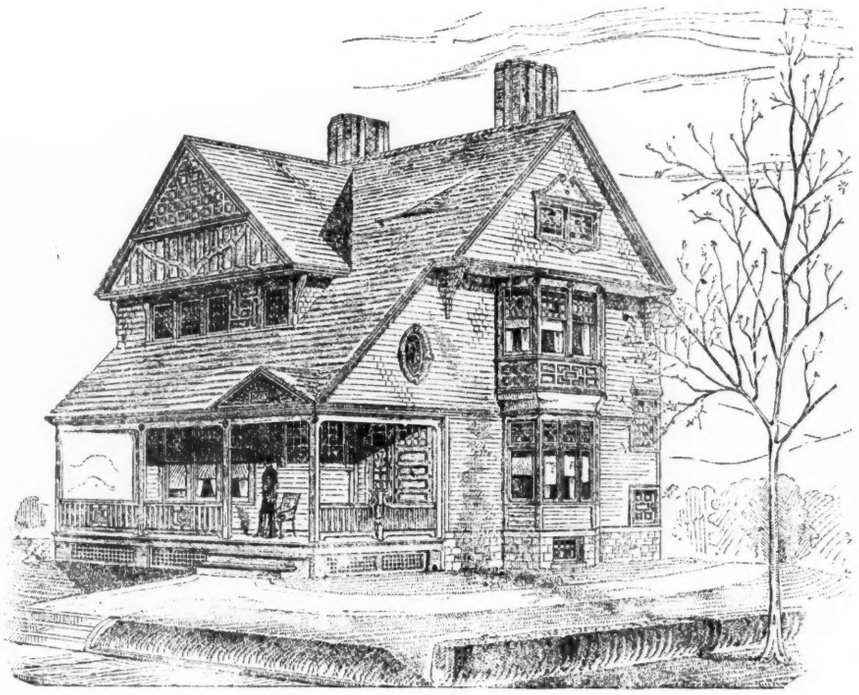


Fig. 1.—PERSPECTIVE VIEW OF COUNTRY HOUSE.

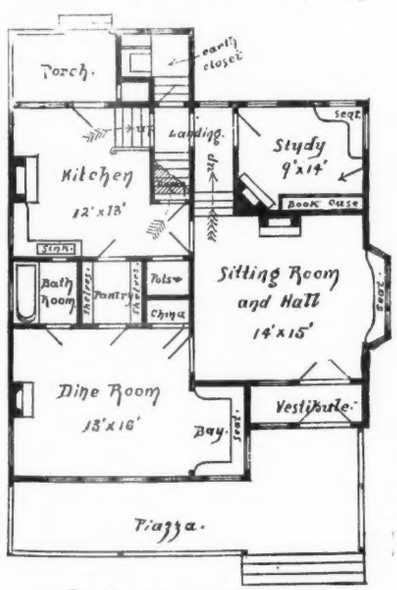


Fig. 2.—PLAN OF FIRST FLOOR.

THE GREAT LAKE DOG-FISH.

The fresh-water dog-fish is in no way related to the miniature shark of like designation that abounds in the waters of the Atlantic. On the contrary, he belies his name in his general appearance, which is most reputable; and on account of his olive and green markings, and more especially the glossy black spot set in a circle of orange upon the tail, and also for his extreme tenacity of life, is in great request for private aquariums and ponds. A score may be kept in a barrel of rainwater without care or changing for weeks or months; or one may be impaled upon a hook and serve the purpose of bait to catch a number of fish, even the shark-like Mackinac trout, and yet, in spite of his torn and mangled condition, will kick and squirm with all the vivacity and vitality of the typical cat with its "nine lives." By the Great Lake fisherman he is held in universal contempt, and is termed "Lawyer," because forsooth "he snaps at anything that offers, yet himself is good for nothing when caught": belonging to the race known as *Ganoids*, his flesh is soft and pasty, and is rejected even by the stomach of the savage. Usually, when found in the nets, he is made a victim of torture, being "sprit-sail-yarded," as it is termed—that is, a skewer thrust through the gills in such a manner food can no longer be taken, when, of course, he dies a lingering death from starvation.

Lazy, selfish, and cruel, he lives exclusively by his wits. To see him in the water, he has a curiously sedate and contemplative appearance—something like a bull-terrier looking out from under a gate. Exceedingly swift when he so elects, and possessed of such extraordinary muscular power that he is able to divide in twain any fish not more than half his size with a single stroke of his trenchant jaws, withal he is indolent, and rarely moves about much in search of prey. Instead, he stations himself boldly in the midst of schools of cat-fish and perch—his favorite prey in spite of spiny armor—or ciscoes and herrings, and there remains for hours, even days, so motionless that he is soon looked upon as a mere harmless fixture, by which time they usually feed him well. Fish come and go, whisking under his very nose almost, yet with rare self-denial he abstains from molestation until their confidence is assured; and now let some innocent swim sufficiently close to touch the two short stubby tentacles that adorn either side of his nose, and it pays for its temerity by vanishing down his gullet head foremost, with a celerity

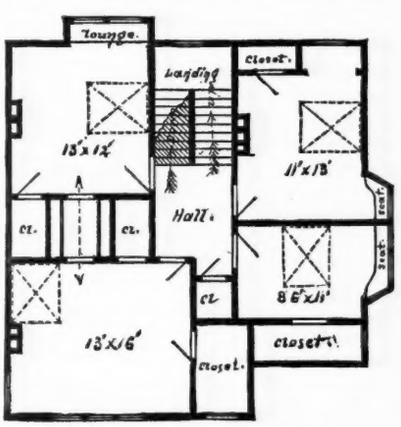


Fig. 3.—PLAN OF SECOND FLOOR.

that almost defies detection, and that also is wholly unnoticed by the companions of the unfortunate. Some years since two Lake Huron dog-fish were placed in a tank at the New York Aquarium which held some scores of little cat-fish, such as are usually denominated "bull-heads," and in a week's time, in spite of abundant supplies of food, the latter had nearly all disappeared. In all that time, too, these greedy villains were never seen to dart upon their prey, but merely await the falling of the cat-fishes into their jaws, so to speak; and the only thing that would at all lure them out of their apathy was the dropping of pieces of raw beef into the tank.

After the gar pikes, and larger members of the pickerel family (Great Northern pike and muscallonge), there are no inhabitants of the Great Lakes that can compare with the dog-fish in voracity, cunning, or savage cruelty. Fortunately they are not so abundant in these waters as in the Upper Mississippi and its tributaries, which would seem to have been their original home, and where they are said to attain weights considerably in excess of twenty-five pounds —a figure that exceeds by one-fifth the largest I have ever seen from either Lake Michigan or Lake Huron. They serve one good purpose among many evil ones, however, in that they wage unrelenting warfare upon turtles and lake lizards or mud puppies, both of which are most disreputable citizens of the aqueous commonwealth in which they reside, being insatiate devourers of the spawn and fry of the better classes of fish, such as trout, herring, ciscoes, and the white-fishes. In some ways, especially in its phlegmatic habits, the dog-fish reminds one most forcibly of the lake cat-fishes, though he surpasses them in intelligence, in beauty, in speed, in all in fact save gluttony.

The female dog-fish appears in somewhat better light than her liege lord and master. The latter esteems the spawn and fry of his own species as delicacies, and devours them on every possible occasion. She, on the contrary, though willing enough to prey upon the spawn and immature offspring of others, guards her own sedulously and jealously, with all the fierceness displayed by a lioness in defense of her cubs. She will allow herself to be torn to pieces rather than abandon her loved ones. With watchful eye she hovers over the tiny eggs until they are hatched, then leads the little ones to out-of-the-way and hidden nooks among the subaqueous vegetation. When all other means of defense are exhausted, she opens her capacious maw, when in rush the younglings, with which she flees to a place of safety, when they are again released. This trait, though common to some salt-water and South American species, is, I believe, unknown to any other denizen of the Great Lakes.

DR. G. ARCHIE STOCKWELL, Mich.

OUR APPLES AND CANNED FRUITS.

The shipment of apples from the United States to Europe began in 1845, when five barrels were shipped from Boston to Glasgow. The trade grew rapidly, and is now mainly carried on at Boston and New York, the latter city doing by far the larger part of the entire trade. There is also an export of apples from Canada which is something like one-fifth of the entire export to Liverpool, at which port most of the fruit from this country and Canada is received. In ten years (1876-86) the receipts of apples at Liverpool were about 3,500,000 bushels, of which Canada contributed 721,000 bushels. The exports of apples and of dried apples from the United States alone for the three last fiscal years, and for ten months of the present [the fiscal year ending with June], are as follows:

	Apples, bu.	*Dried Apples, lbs.*		*Apples, bu.*	*Dried Apples, lbs.*
1884–5	668,867	18,417,000	1886–7	592,000	8,000,000
1885–6	744,539	10,473,000	10 mos. of 87–8	485,858	11,192,995

The value of these apples was $6,132,733, and of the dried apples, $2,802,398. The value of the canned fruit exported in the same period was $2,238,495, an aggregate of more than $11,000,000, to which may be added a million and a quarter more for the item of "other green, ripe, or dried fruits." These figures show an average of about $4,000,000 a year in fruit export, or about one-thirteenth of the entire orchard product as given by the Census of 1880. This, as compared with the export returns of other crops, is a very favorable exhibit, and when the wonderful growth in exportation of apples to England—from five barrels in 1845 to more than seven hundred thousand forty years later—is considered, the promise of the future is very great. A London journal in February last noticed the increased demand for American and Canadian apples as "simply astonishing," and as happening "season after season," and begged the home grower to take the remedy in his own hands. It must not be forgotten that while the export trade in apples is large, it is regulated to a considerable extent by the proportions of the crop both in this country and in Europe. England pays other countries $40,000,000 a year for fruit that can be raised on her own soil, and her established policy is to raise within her own area, home and colonial, every possible product that the earth yields. Our exported orchard products, however, are by no means limited to the narrow field of Great Britain, although she is our largest customer. They are wanted in other countries of Europe, in the West Indies, and in Australasia. The dried apples go to thirty-six, the fresh apples to thirty-three, and the canned fruit to sixty-one of the seventy-four countries with which the United States holds commercial relations. Last year Spain took one barrel of apples, and paid five dollars for it. France took five at a cost of twenty dollars. "All other French possessions" had twenty-six barrels for $114. Cuba only received fifty pounds of dried apples worth four dollars, and Ecuador paid eight dollars for the same quantity. But small as is the trade in some of these benighted countries, it is growing elsewhere, and by and by they will all eat American fruit, and rejoice in the opportunity to do so.

PREVENTING FIRES.

The hot dry weather has made litter, etc., easily combustible. Even the growing grass is so dry that it will readily ignite. The farm hand should not be allowed to walk about the farm with a pipe; the live ashes, blown from it, may ignite the grass, or the dry litter in the fence corner, or the stubble. It is not an unfrequent thing for a string of fence to be burned by a spark igniting the dry grass and litter of the fence row, or for a spark to start the stubble afire, sweeping on to the destruction of the stacks and buildings. Certainly at this time a lighted pipe should not be allowed near any of the stacks or buildings. We very much doubt if a lighted pipe is ever allowable on the farm. Though the smoker sits down while he smokes, he is apt not to think at all, or he may forget, to stamp out the ashes that he knocks from his pipe.

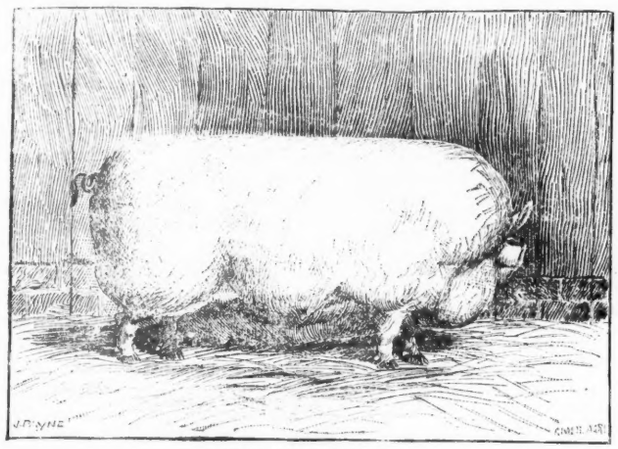
To allow children to play with fire, or to have matches, is manifestly so foolhardy that it need only to be mentioned. It is too careless to carry matches loose in the vest or coat pocket; for the coat or vest may be thrown down on a bunch of hay or straw or on dry litter, and then the tread of an animal, or the gnawing of mice, may ignite the matches and start a destructive conflagration. If stubble is to be burned, it is better to start the fire against the wind if the stubble is quite dry, although a fire guard has been plowed. We know a young farmer, working hard to get a farm and home paid for, who burned up last season eighty tons of first-class hay; he plowed a guard forty feet wide around a large stubble field, and started the fire before the wind. It swept over the guard, caught in the dry meadow stubble, and went on to the hay ricks. Fortunately a large threshing crew was near by, and by hard effort the fire was stopped.

Not infrequently the fire originates in the house, and in such a way that reasonable care would have prevented it. We very much doubt if twenty per cent of the families in this country have metal match safes. Usually the matches are kept in the pasteboard box in which they are bought—certainly dangerous. In the summer the kitchen stove is shut up after dinner while the housewife goes to the garden, or to another room to sew. If the stove is new and tight, this is safe enough; but if the doors have been drawn by the heat, or holes have been made by the corners of doors breaking off, fire may drop out on the floor, and the breeze from the open doors and windows may fan it into a conflagration. We should always bear in mind the fact that what appears after the event to be very ordinary care, would have prevented nine-tenths of the conflagrations in the country.

Improvement in Farm Poultry.—Farmers everywhere are realizing the necessity of giving more attention to poultry. The old proverbial "barnyard fowls" are rapidly disappearing, making room for thoroughbreds. Many farmers comprehend the fact that there is profit in keeping but one variety of thoroughbred fowls. By systematically selecting the best birds for breeding purposes, the stock will improve constantly, and the farmer realizes not only the profits of general poultry raising, but his breeding stock will soon become known, and bring extra prices. Plymouth Rock, Wyandotte, and Langshan stand foremost as all-purpose farmers' fowls, while the Java, Houdan, and Dorking have also strong claims and meet the general requirements for the farm. Whatever breed is chosen, success depends upon the careful selection of the breeding stock, in poultry as much as in other farm animals.

SMALL YORKSHIRE SWINE.

The "Small Yorks," as they are commonly known, are of English origin. They descend from the old white swine of Yorkshire, which were originally a coarse, unprofitable race. But selection and judicious crossings with the fine-boned, easily-fattened Neapolitan and Chinese swine produced the modern white breeds of England, of which the Small Yorkshire is one. It is a well-defined and established breed, so strongly prepotent that even when crossed with Berkshire and other black races the cross-bred pigs are always pure white. The Small Yorks were first brought to this country about 1872, by Col. Richard M. Hoe of New York, and



SMALL YORKSHIRE SOW.

Wm. H. Cole of New Jersey, and they have now become widely distributed. They are "small" only by comparison with the so-called Middle and Large breeds, but attain good weight and mature early. Of their general appearance no description can convey so accurate an idea as the accompanying portrait of a pair owned by J. O. Frost, of Vernon, Vt. It will be seen that they possess leading points of porcine beauty, as small heads, heavy jowls, short dishing faces, delicate semi-erect ears, wide shoulders, deep long bodies, thick square hams, short straight legs set well apart, and small bone. The skin is moderately thin, and covered by a coat of fine white hair with no bristles. The Small Yorks are vigorous and hardy, growing rapidly on grass, and possess remarkable fattening qualities. The flesh is not as finely marbled with fat and lean as that of some other breeds; but the rapid and vigorous growth for the feed consumed, together with the small amount of bone and offal, render them profitable for feeding. They are also well adapted for crossing with other swine, always impressing their own color and qualities on the progeny. The breed is in the hands of some of the most enterprising and progressive breeders of the country. In 1878 a number of breeders met in New York and organized the American Small Yorkshire Club. The club publishes a register of the breed, and in other ways maintains its purity.

ARE YOU READY FOR THE FAIRS?

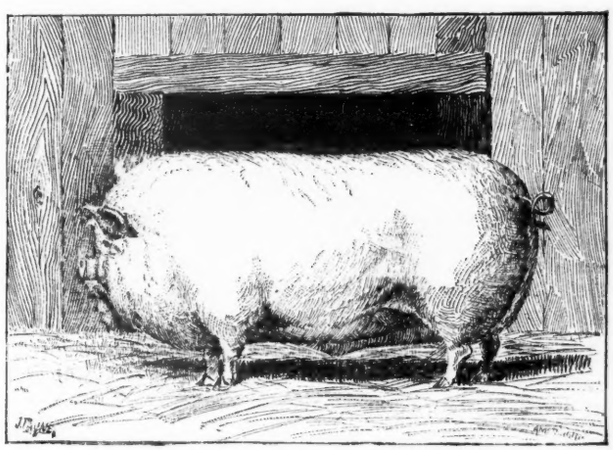
It is the duty of every farmer and gardener to encourage his local fair first, and then to attend as many others as may be practicable. The local, usually the County, fair is capable of being made more useful than the large or State fair; there are not generally so many articles to be seen as to tire one before he has examined the half of them. Besides, at the smaller fair the farmer does not feel as if he were among strangers; he meets his neighbors, and there is abundant time to talk over farm experience, and their successes and failures. Of course every one who goes to a fair should exhibit something, and many have already decided what they will take to the fair. Our object at the present time is not so much to suggest what to exhibit, but to give some hints how to do it. The officials at small fairs rarely provide properly for the display of small articles.

In asking "Are you ready for the fairs?" it is our object to suggest a little timely preparation in this respect. It is rarely that one likes to take dishes for his fruit, as the risk of breakage is too great. The best substitute for a dish is a shallow wooden tray lined with white paper. Procure a few starch or soap boxes, and similar boxes of different sizes, with their covers. These are to be sawed apart to make shallow trays, with sides about three inches high; nail them securely at the corners and fasten on the bottoms firmly. A box will make two, if not three, such frames or trays, using the cover for the bottom of one, and if three are made, parts of other boxes may be used for the bottom. Make as many of these as there are articles to be exhibited, and a few extra ones will not come amiss. Provide enough cheap muslin to cover the portion of the table that you will occupy. The vegetables should be dug the day before, selected and washed, and placed where they will be dry by morning. Take to the fair a sufficient supply of white wrapping paper, tacks large and small, hammer, etc. Upon arriving at the ground, line the boxes neatly with the paper and arrange the fruit and vegetables in them. Do not throw them in, but arrange them, the stem ends of the fruit all pointing in one direction, and the vegetables neatly piled up, with their tops all pointing the same way. Prepare beforehand labels for each article, plainly written upon cardboard, giving the name of the variety and that of the exhibitor, and tack the label to the box to prevent its being blown away or misplaced. Such a collection, showing order, neatness, and painstaking, will prove very attractive and be a useful example to others. If there are bouquets to be exhibited, use old fruit cans filled with sand and covered with paper; the sand may be moistened and will answer much better than vessels of water and be much less liable to accident. These matters may seem trivial to some, but the result will be gratifying.

If a fair, as it usually does, lasts for two or three days, it is a great mistake to crowd the going, the sight-seeing, and the returning all into one day. It makes a day of fatigue, rather than one of recreation. Our Eastern farmers can learn much from their Western and Southern brethren in getting the most out of a fair. Instead of crowding all into a day, the Western or Southern farmer often devotes several days to it. We have visited many fairs in which a portion of the grounds is set apart for those who "come to stay." Provision is made for the supply of water, and police arrangements are made for keeping the ground in order. Families from a distance come in the "big covered wagon," the housewife having prepared bread, boiled ham, or other meats. A small camp-fire will answer for making tea and coffee and cooking potatoes, usually the only vegetable provided. The careful housewife will see that some dry wood is stored away in the wagon, to use in case of rain, and other things provided for camping out that former experience has shown to be needful.

THE WHEELBARROW ON THE FARM.

How often we must move things too heavy to carry, yet not heavy enough to justify hitching up a team to haul them. But the



SMALL YORKSHIRE BOAR.

team must be hitched and half an hour is consumed, when the article could have been moved with a wheelbarrow in five minutes. The railroad barrow is the cheaper, and answers well enough for conveying dirt, manure, or vegetables; but the garden barrow, with a higher wheel and movable side-boards, is more convenient. It is the all-purpose barrow. Let the wheelbarrow be named first among the labor-saving devices of man. It truly lengthens life, for it saves energy; and it makes life more pleasant, for it conduces to ease. It costs little and lasts long when well cared for. More than half of it can be made by the farmer. If you have not one, and are unable to buy one, make what you can of it and have the blacksmith complete it, and you, too, will sing the praises of the wheelbarrow.

INTERESTING CAPE BULBS—FREESIAS.

Having seen the *Freesias* in cultivation in this country only in recent years, we supposed that they were newly introduced to cultivation. We consulted the most recent "Dictionary of Gardening" for the date of introduction, as well as for the meaning or the origin of the name applied to the genus. The date was omitted, and as to the name we are told "derivation unknown." *Freesia* is a genus of Cape of Good Hope plants, of the Iris Family, which have for over sixty years been cultivated at the Cape for export. There seems to be some doubt as to the number of species. Dealers offer *Freesia refracta* and *F. refracta alba*. The first of these has the flowers marked by orange blotches, while the variety has pure white flowers. According to a correspondent at the Cape, there is but one wild species, and the variety with white flowers is obtained by selecting the bulbs. A few years ago a new species was introduced, *F. Leichtlinii*, named in honor of M. Leichtlin, who has done so much for the culture of hardy plants. Recently this new species was figured by the *Gardener's Chronicle*, and we reproduce its engraving. In the flower it differs in the shape of the corolla, which contracts suddenly below into a very narrow tube, while the limb spreads more widely. In color the flowers are a yellow, or at least decided cream color. This has, in common with the other kinds, the property of retaining its fragrance for a long time after it is cut and placed in water. It also produces flowers in a pleasant succession. The Freesias are of great ease of culture; they produce seed freely, and if sown as soon as ripe often flower the first year. They are among the most satisfactory of plants for a window garden. We have them in bloom all winter in a cool greenhouse. The bulbs are planted rather thickly in boxes of rich sandy soil. After they cease flowering in spring, they are allowed to go dry all summer; in August or September the bulbs are shaken out of the old soil, assorted, so that those of the same size may be planted together, and repotted in fresh soil, a fresh sandy loam with well-decayed manure. When growth starts give water, plenty of air, and protect from frost.

FREESIA LEICHTLINII.

Green Peas in Autumn.—Peas are just as delicious and profitable a vegetable in the fall as in the early spring? Those who do not already know it may soon ascertain the fact if they will. For this purpose use one of the small early sorts and sow about August 1st. As the ground is quite apt to be dry at this time, and as the peas must be hurried along ahead of frosts, it will be well to sprout them before sowing. I have found the best way to do this is to take rich soil, say three parts to one of peas, and mix it up thoroughly with the seed. When well sprouted sow the soil and seed both in a well-prepared drill-row, and you will be surprised at the brief time that elapses before your peas are up and in blossom. Other spring vegetables often sell well also in early autumn. J. K. REEVE.

COFFEE CULTURE FOR PROFIT AND ORNAMENT.

HENRY DERBY.

Being an old coffee planter, I was much interested in the article on coffee culture in a recent number of the AMERICAN AGRICULTURIST, and also in the one suggesting the cultivation of coffee as an ornamental plant. A coffee plantation in full bloom is certainly as pretty a sight as any one can desire to behold. It has the appearance as if a heavy fall of snow had settled all over the trees, nearly concealing their dark glossy foliage from view; the scent is overpowering. I have sometimes passed through forty miles of almost unbroken scenes like this on the island of Ceylon. The first successful coffee plantations in India were established by Sir Edward Barnes, about 1825, at Gangaroowa, near Kandy, and one near Gampola. From this beginning coffee culture gradually developed until it became the leading agricultural industry of that country. Vast sums of money were invested, and large returns were obtained in many instances, bringing great prosperity to the country. I know of one property of three hundred acres, belonging to the present Sir Groeme H. D. Elphinstone, which in three years has yielded the handsome profit of $125,000. Of course such returns are only obtained by a liberal expenditure for cultivation, yet many others have secured even larger profits. Of late years, however, the coffee plant has been attacked by a disease which has nearly ruined its cultivation. Coffee is grown up to an elevation of six thousand feet above the level of the sea. Some of the very best estates are about that elevation, and the high grown coffee commands the best prices. Some of the most valuable coffee estates in India are situated in Wynaad, in the Ouctherlony Valley. Sir Emerson Tennant states that the coffee plant has existed in Ceylon from time immemorial, but that the natives were ignorant of its use. The coffee plant would probably thrive well in parts of California where there is little or no frost. If seed were procured from one of the India plantations at a very high elevation, say six thousand feet, the plants raised from it would stand a moderate degree of cold, as I have often seen white frost on the ground in Ceylon.

Tea is another plant that might be cultivated in many parts of the United States, as it stands cold much better than coffee. It is no uncommon thing to see frost where tea is growing successfully, and not doing any damage. The writer planted one of the first tea gardens in Ceylon, where now coffee is being supplemented by tea. The Assam indigenous tea is esteemed best for cultivation, as its leaves are large, remarkably soft and pliable, and roll well.

THE MANY-FLOWERED ROSE—(*Rosa polyantha*).

Among the many plants tried for the first time last summer, none gave more satisfaction than the Japanese Rose which is called *Rosa polyantha*, though it is doubtful if it is the plant originally so named. The species, though a rampant climber, has, by hybridizing with the Teas, etc., given origin to what are known in the catalogues as "Liliputian Roses," or Hybrid Polyanthas. These are dwarf in habit, but retain the free flowering character of the species. They are double, and highly valued for their beauty. The plant we now refer to is the single and probably the wild form. Our plant

THE MANY-FLOWERED ROSE.

was set out last spring, and is yet small. Yet we have accounts of a bush in England, six years planted, which is thirteen feet high and eighteen feet across. The name *polyantha*—many-flowered—was rightly chosen for this species, for the abundance of its flowers is something wonderful. Its flowers are single, with white petals and golden yellow stamens, and are deliciously fragrant. The flowers are so attractive to bees, that it is suggested in England that it would be valuable to plant for bee pasturage. The flowers are in large clusters, as shown in the engraving, and these clusters are so numerous that when in full bloom they almost entirely hide the foliage, and the plant appears like one mass of flowers. This rose has every element of popularity. An eminent French rose-grower says that it is the hardiest of all roses. An English gardener says that it is propagated with the greatest ease from seeds and from cuttings in the open ground. In France plants raised from both seeds and from cuttings are being experimented with as stocks for Tea and other roses, but its value as a stock is not yet sufficiently tested. In its single form, the only state in which we have grown it, it is highly commended as a screen plant to cover an unsightly fence, or shed, or other object. It is especially adapted to this use by its rapid growth; and by its habit of covering itself with such multitudes of fragrant flowers it becomes an object of beauty. This is one of the new plants that "have come to stay."

THE GRANADILLA (*Passiflora edulis*).

The Granadilla Vine (Little Pomegranate) cannot fail to become a favorite climber over arbors, fences, screens and porches in South Florida. It is a native of Southern Brazil, and was introduced to Florida by A. J. Bidwell a number of years ago. It has fruited in several localities even previous to the "freeze" of January, 1886, notably so at Orlando and at Clearwater Harbor. The vine is of very quick and rank growth, excelling in this respect any other species that we know, excepting perhaps its very close congener, *P. macrocarpa*, of Jamaica, and perhaps *P. Pfordtii*, one of the ornamental species.

The various species of Passion flowers are in Florida subject to the attacks of a destructive and ever-increasing caterpillar, which in many cases, at a certain time in the fall, unless carefully "hand-picked" every day, often leave not a vestige of leaf or tender shoot on the vines. Of course, "hand-picking," unless in the case of a few small pet plants, is a practical impossibility, and therefore many species are hardly worth growing here. But *P. edulis*, and also *P. macrocarpa* and *P. Pfordtii*, have such a quick, rank habit of growth that the caterpillars rarely make any impression on them whatever. A young plant of the Granadilla planted out in spring, or even a plant raised from seed planted then, will, under favorable circumstances, and a following winter without severe frost, cover several square rods of trellis, and blossom and fruit freely during the second summer. The leaf is three-lobed, large, almost maple-like; very shining and glossy, and of a light green color. The flowers are large, light-colored, but showy. The fruits are egg-shaped, varying in size according to circumstances, from that of a hen's egg to that of a goose-egg. They are of a light green color at first, but when fully ripe they become purple. The outside consists of a rather hard shell a quarter of an inch in thickness. The pulp inside is light-colored, with a pleasant, grape-like taste; it contains many small, flat, black seeds, which are eaten with the pulp.

The Granadilla requires no special culture except a moderately rich, well-drained location, and liberal surface cultivation. Even without its excellent fruit-bearing qualities it would be an exceedingly beautiful and valuable plant for screens and trellises in almost any location where quick growth is required, and hard frosts are not liable to occur.

P. W. REASONER, Fla.

A NEW ORNAMENTAL PLUM—"PISSARD'S."

About the year 1881 there was sent to France by M. Pissard, gardener to the Shah of Persia, a plum of such an ornamental character as to attract the attention of French horticulturists, and it was figured in *Revue Horticole*, and given the name of the discoverer, *Prunus Pissardi*. In a short time it made its way to England as an ornamental shrub, its glossy black twigs, rich claret-colored foliage, and white flowers produced in profusion, made it very popular, and it was found to be excellent for forcing. Messrs. Paul & Son, the English nurserymen, have succeeded in fruiting this shrub, for it is that rather than a tree. The fruit is of medium size, dark red, and sugary when mature. In figuring a twig with leaves and flowers, the *Gardener's Chronicle* (Eng.) says that the fruits "though not of first-rate quality, were by no means to be despised." Ornamental in foliage and flowers, with a tolerable fruit, it is certainly of great promise, and we hope that those who have tested it in this country will give us a report as soon as may be.

Dandelions and Sage.—Mrs. Geo. D. Johnston, Center Co., Pa., writes us: "No part of our kitchen garden yields us more pleasure than the two borders devoted respectively to dandelions and sage. All are fond of 'greens' in spring, and the craving is a natural and wholesome one. When the seed was advertised for sale we resolved to spare ourselves further trouble of hunting wild dandelions in the

PISSARD'S PLUM.

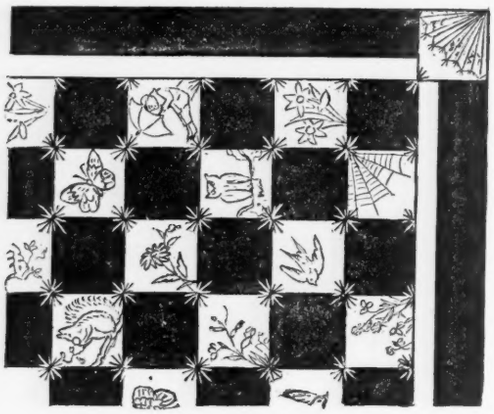
fields and fence corners, and sent for a paper of seed. We sowed it early in May in shallow drills along the front walk of a garden bed. The following spring we had an abundance of fine early salads and greens from it, and have now enjoyed it four successive years. The present spring I sowed a fresh bed. It not only affords a good dish for the table, but later it makes a beautiful border of golden flowers which alone far repays for the little cost and trouble. Another thing we greatly enjoy is our sage bed. Its cultivation is so easy that any one can have it by sowing the seed in spring."

THE HOUSEHOLD.

UNNECESSARY WORK.

"Unnecessary work, indeed!" I hear some reader exclaim. "Don't preach to me about unnecessary work. There is quite enough work that must be done to waste any time over that which can be left undone." And yet I am convinced that at least one-quarter of the work performed by women is unnecessary, and that the world would get along quite as well without it. I would be a better and stronger woman to-day had I confined my energies to strictly necessary work. I do not now refer to what is known as "busy idleness"—to the working of impossible and undesirable yellow peaches on red plush mantel scarfs. Have we not all known the "overclean" woman? Such a woman is very apt to be a nuisance to her family and friends. I once overheard a conversation between two gentlemen whose wives were certainly as near to godliness as cleanliness could take them. They were condoling with each other upon the miseries of that annual horror, housecleaning. They both voted it, as carried on at their homes, an entirely unnecessary evil. One said that during its progress at his house everything was so wet that he always felt in danger of a deluge, while his friend remarked that he could stand the water, it was the smell of yellow soap that he objected to, and that women scrubbed too much.

The wise woman will draw a clearly defined line between the state of cleanliness which compels her to make a drudge of herself instead of a companionable wife and mother, and that which betokens a really slovenly housekeeper. There is a knack of keeping things clean which all housekeepers do not possess, but which can be cultivated. I have observed the greatest difference in this respect in servants; whereas one will get a dinner and keep her kitchen and work-table in spotless order during the operation, another will have every saucepan and dish dirty at the same time,



A NOVEL BED-SPREAD.

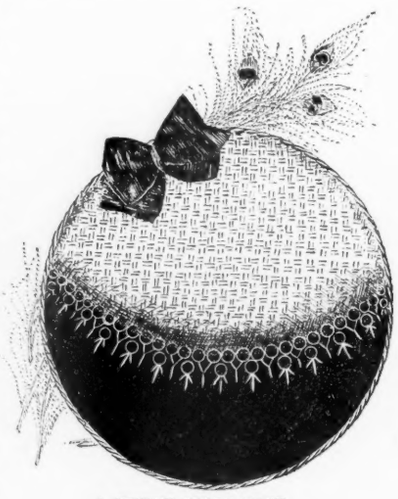
and her table a medley of soiled china, tins, knives, forks and dish-cloths, with flour, salt and sugar strewn from one end of the room to the other. You can save yourself many steps by a strict adherence to "a place for everything and everything in its place." You may have windows that are not bright and spotless, and still be a very nice housekeeper. If I could not wash my windows without such an amount of fatigue as I knew would unfit me for a pleasant evening with my husband and children, I should think it the lesser evil of the two to leave them unwashed. When a woman has no time to read a book or paper, or to call on a friend, or to write a letter, there is a screw loose somewhere in her domestic economy, and the sooner she recognizes it the better, provided she remedies the evil. If you are obliged to do your own sewing in addition to your housework, every tuck and ruffle that you put on your little one's garments is a crime. The time spent in making an elaborate dress that baby will look "lovely" in, is worse than wasted. Baby will look quite as "lovely" in his own eyes in the plainest of slips.

Give the matter serious thought, my weary sisters, and see if in this and many other ways you do not add to your burdens, which may already be heavy and grievous to be borne. Rest your body and improve your mind, thus keeping your heart and face as fresh as possible, as you value the love of your husband and children. ALICE.

Steamed Pudding.—Beat together one egg, one-half cup of sugar, one tablespoonful of melted butter or sweet drippings, and a pinch of salt. Add one cup of cold water, and one of raisins and currants dredged with flour. Thicken with flour through which baking powder has been sifted, until somewhat stiffer than cake batter. Pour into a buttered mold and steam for one and a half hours. This is a very simple and excellent pudding.

A PRETTY PAPER RACK.

The back of the paper rack shown in our illustration is made of a circular board covered with matting that comes around tea boxes; it is drawn smoothly over the front, and is tacked on the back. The pocket is cut out of heavy pasteboard, large enough to make space for the papers. This is covered on the outside with olive green plush, and lined inside with sateen of the same shade. The top is finished with a couple of rows of brass rings, sowed on with colored silk; the long stitches are done in scarlet. The pocket is tacked on, and the edge is finished with a small rope, which is also tacked on. This and the rings are covered with a coat of liquid green, by means of a small brush.



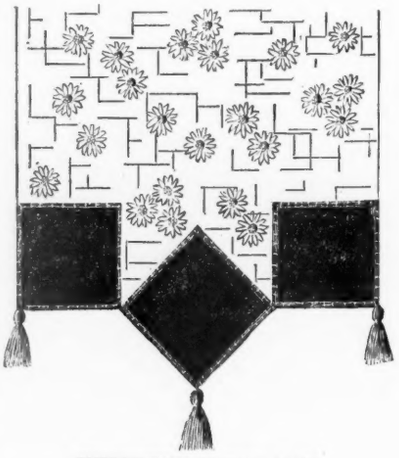
A PRETTY PAPER RACK.

A NOVEL BED-SPREAD.

The new style of patchwork seen in our engraving will probably suit some of our little girls better than the old over-handing style, and we should not wonder if grandma would be persuaded to make one of these spreads, if she could see how pretty they are. The one here represented is made of indigo blue and white muslin. The blocks should measure seven inches square before they are joined. The designs can be copied from a picture book with the aid of transfer paper. Then they are to be outlined with blue working cotton, stitched together on the sewing machine; the stitches in the corners should be blue and white, and a border of blue and white stitched around. Turkey-red may be used instead.

DAMASK EMBROIDERY.

This work admits of a great display of taste. White and cream damask table linen is used for the foundation of the embroidery. Then the design is outlined with colored wash silk; in some patterns parts of it are filled in with the woven and darning stitch, as one's taste may suggest. The sample shown in our engraving represents the end of a bureau scarf. This is outlined with blue wash silk; the center of the daisies is filled in with yellow silk, done in pinch knots. It is hemmed on the sides; the ends are finished with three squares of plush, as seen in the illustration. These are made over crinoline, finished around with a couching of yellow silk caught down with blue; they are fastened on with as few concealed stitches as possible, so that they can be easily removed when the cover needs washing. Many other things can be made in this manner.



EMBROIDERED BUREAU SCARF.

FANCY TOWELS.

In the accompanying engraving we have grouped three of the most novel designs into which damask towels can be converted. The top one is intended to be tacked up behind the wash-stand to serve as a wall protector. The one to the left below is by a little fitting turned into what is termed at our "art stores" a "combing cape," to throw around the shoulders while dressing the hair. This is made by folding the towel together, cutting an opening in the middle for the neck; then open one side of it and fit it over the shoulders. Bind it around the neck and down the fronts with white linen braid or tape. The ribbons used to tie it together should correspond with the color in the towel. The pink and white and

TOWELS, USEFUL AND ORNAMENTAL.

blue and white towels are prettiest for this purpose, and they stand washing as well as red ones. The apron on the right lower corner will scarcely require a description. One end of the towel is folded over, and is slightly gathered across the top and attached to a cord and tassel that confines it around the waist, or a ribbon may be used if preferred. Towels for the above uses can be purchased from thirty cents upwards.

A SERVICEABLE TIDY.

It being so difficult to find a tidy that will fit over the back of an old-style rocker, we have designed one that is not only durable, but can also be kept in place. It may be necessary to use four ribbons on some, while on others two will answer. Three were found to be best on the one seen in our illustration. This is made of heavy white linen the width of the chair-back. The top is hemmed and the bottom finished with tied fringe; one end has a row of drawn work above it. The designs are outlined with No. 10 turkey-red working cotton. The ball design can be easily copied with the aid of a small tumbler and a ruler, and the other end varied by using a square in place of the circle, if one does not care to attempt the spray. The ribbons sewed on the top should match the embroidery in color. These can be tied to suit the shape of the chair-back.

INEXPENSIVE DRESSES FOR MIDSUMMER.

Freshness is the first desideratum in light summer frocks, and now that the flush of the shopping season is over this may be attained at little expense. Never, surely, were cotton fabrics more attractive, while some dainty lawns embroidered with silk are so fine that they are thought worthy to be made up over silk petticoats, and are considered really elegant costumes. These are rare, however, and not economical, so most of us content ourselves with the pretty sprigged muslins that are made without lining, and ornamented with belt, braces, and bows of watered ribbon, in the preferred shade of the sprig. No more charming gown could be desired for a lawn party, picnic, or any out-door gathering, and the costume will be complete if with it is worn a hat or bonnet of lace-like "Neapolitan" braid, lined with white or some delicate harmonizing tint, and trimmed with gauze ribbon and a spray of flowers. If desired, too, an old parasol of plain silk can be easily covered at home with a piece of the dress muslin, finely plaited, and finished on the edge with a scant ruffle of lace, thus forming a perfect and truly genteel toilette.

Victoria lawns and barred muslins are also again in high favor, and are made up simply for mornings, with belted sailor blouses and full round gathered skirts. Somewhat more dressy, however, is a plaited skirt puffed up a little in the back, and a plaited blouse confined round the waist by a soft wide sash tied in front or on the side. The sleeves are full and gathered at the wrists. This style is suitable for Challis and veilings, as well as all wash goods. Surah silks have retired somewhat into the background, but are most delightful wear, and excellent qualities now sell as low as sixty-five or seventy cents per yard. Piece lace forms the prettiest trimming for these, being arranged as a fichu on the waist, and festooned across the front of the skirt, caught high on one side, and allowed to fall in a pointed panel on the other. A little jet or bows of moiré ribbon add the finishing touch to this ladylike and serviceable dress. Black lace or dotted net is used on black surah, and ivory white over cream, blue, heliotrope, and delicate shades of green and yellow.

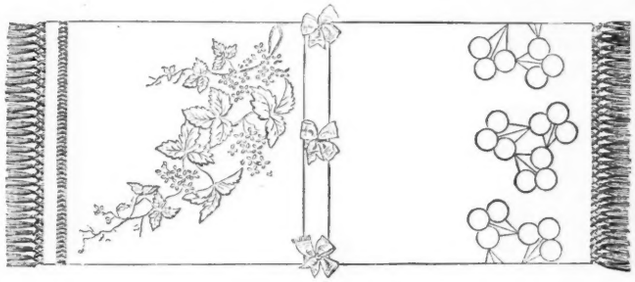
For full-dress, the plain, suede, mousquetaire style of glove is worn, the favorite colors still being tan, cream white, and black. For street wear and calling, however, buttoned gloves are preferred, fastened by four large gilt buttons, and with corded backs. They may be either of glacé or undressed kid. Gray gloves are worn with gray suits, and with black lace and blue dresses; but for other costumes the tans still hold their own. Silk gloves are neater and prettier than ever, and the taffeta, which are a mixture of silk and linen, wear much better than those of pure silk. Manufacturers have also lately introduced a silk glove with kid tips to the fingers, but these can scarcely be said to be in vogue.

RELIABLE RECIPES.

FRIED KIDNEYS.—Cut the kidneys in dice, taking out all the white fat; put a little dripping in the frying-pan, and when very hot lay in the kidneys; stir around for a few minutes until they are brown—from eight to ten minutes will suffice; add a teaspoonful of flour, salt and pepper, and half a gill of broth or hot water. Do not let them boil, and pour over buttered toast. A few minced mushrooms, if in season, are a desirable addition.

GINGERBREAD.—Mix together half a cupful of molasses, and as much sugar, with half a teaspoonful of soda dissolved in the molasses; add half a teaspoonful of salt, a tablespoonful of ginger, and one of melted butter; one cup of sour milk with a scant half teaspoonful of soda dissolved in it, and about two and a quarter cups of flour. Bake in a loaf or in small gem pans; if the latter are used have them hot. This is inexpensive and delicious, and with chocolate makes a nice lunch.

BAKED EGGS.—Break six eggs into a bowl; add a gill of cream or rich milk, a scant half teaspoonful of salt and a saltspoonful of pepper, and beat until light. Pour into buttered custard cups and set in a pan of boiling water. Place all in quick oven, and bake until "set" in the centers. When done turn them carefully out of the molds on a dish and pour a white sauce around them. Make



A SERVICEABLE TIDY.

this as follows: Put a half tablespoonful of butter into a saucepan, and when it bubbles stir in a tablespoonful of flour; stir until smooth and add slowly a large cup of boiling milk, or, if you have it, chicken or veal broth. Season to taste.

BEAUREGARD EGGS.—Boil six eggs until very hard—ten minutes will suffice. Remove the shells and drop in cold water until you have taken the shells from all. Chop the whites fine and rub the yolks to powder through a sieve. Make a white sauce as above, add the chopped whites and powdered yolks; season with salt and pepper, and pour over nicely toasted bread. Another way is to add to the sauce only the chopped whites, pour over toasted bread, and sprinkle on top the powdered yolks. This is a very nice accompaniment to broiled or fried rashers of ham.

BOYS' & GIRLS' COLUMNS.

MISS MOUSEY'S MUSICALE.

AGNES CARR SAGE.

Have you ever heard a singing mouse? I have; and well remember one that treated me to so sweet a serenade every night that I could almost have believed a canary-bird was confined within my bedroom walls. Some wiseacres pretend to say that these musical rodents are afflicted with neuralgia, and that in their agony they utter the sounds that we term "singing"; but if this be true, Miss Mousey Melody, who belonged to the musical variety, bravely concealed her sufferings, and was vaunted far and wide as the most charming prima-donna in Mousedom. Great, too, were her advantages, for her cozy little home was next door to the room of Professor Solfado, the famous violinist, so she had the benefit of all his instructions to his pupils as well as listening by the hour while he practiced and composed and tore his hair—often far into the night, and to the extreme disgust of his sleep-loving fellow boarders. So it was that the octave of mice who were so fortunate as to receive invitations to a grand musicale, to be given by Miss Mousey on a certain evening when the Professor would be away from home, felt highly honored thereby, and were looked upon with envy by all their less favored companions, who however took especial pains to remark that "The finest music in the world would not tempt them to risk encountering Mistress Grimalkin and her frisky young daughter, Pussy Greeneyes."

"All sour grapes!" sniffed old Dr. Whiskers, "for the cats are shut in the cellar every night by nine o'clock;" and he, Madame Longtail, two country cousins named Field, Rodey Feartrap, Miss Churchmouse, Scratchy Sharpnose, and little Scrabble Brighteyes were all on hand at eleven sharp, in their best bib and tucker, their hair brushed to an astonishing state of smoothness, and their nails manicured in the most approved style. They were received by Miss Mousey, resplendent in hat and feathers and scarlet sash and jacket, and by her conducted to the Professor's apartment, where books and music lay scattered about in careless confusion, and where a delicious odor of toasted cheese pervaded the air, as a promise of good things to come after the "feast of music and the flow of soul," and which fairly made the mouth of the little Churchmouse water with anticipation. "Ah, this is delightful, truly delightful!" exclaimed Madam Longtail, nodding her head, adorned with a knitted cap procured from the celebrated "Ragbag & Co." expressly for the occasion, and waving her hands in an ecstatic manner.

"'Most as good as a Harvest-Home," chuckled the Field mice, and then all settled themselves comfortably on a pile of huge folios, to listen to Miss Mousey, who opened the ball by warbling a beautiful operatic air, entitled "Hear me Gnaw, Ma," with so many trills and quavers and crescendos that it was truly surprising. The company applauded uproariously, and the clapping of tiny paws and the shrill cries of "Encore! encore!" brought Miss Melody back in a hurry, beaming and bowing, to give them a simple ballad, "When I was a Mousekin small," which was also enchanting.

AN INTERRUPTED CONCERT.

Next, Dr. Whiskers prepared to perform a violin solo on the Professor's beloved Stradivarius, although the bow was so heavy that Rodey Feartrap and Scratchy Sharpnose had to assist him in drawing it across the strings. Squeaky-te-squeak it went on the high notes, and after considerable see-sawing by the trio, which sent shivers skipping up and down the listener's spine, the Doctor announced that this was "Solfado's latest composition, Monastery Bells," a piece which should have greatly pleased Miss Churchmouse, she being of a religious turn of mind, and which would undoubtedly have done so had she not just then been skirmishing in the background and nibbling at a book of fables; for the smell of the cheese made her ravenously hungry, and she was accustomed to a diet of hymnals. "Now will not the two Mr. Fields favor us with a country ditty?" suggested Scrabble Brighteyes to Miss Mousey, and as the brothers were too gallant to refuse a request from the ladies, they at once mounted the rostrum and lustily roared out "Coming through the Rye," and "Give me Three Grains of Corn," the sentiment of the last being particularly appreciated by the lean little rodent behind Esop's Fables. Madam Longtail then good-naturedly scrambled up onto the piano-stool and played "The Four-Foot Lanciers," to which the young folks danced and capered in the gayest manner, while Dr. Whiskers led off with the hostess, quite unconscious that

within the alcove, in the Professor's bed, Mistress Grimalkin and her plump kitten had curled themselves up snugly for the night, having for once escaped the Argus eye of Dame Housewife.

"Now let us have one good rousing chorus, and then we will stop a few minutes for refreshments," said Miss Mousey. "Yes, yes," agreed all the party heartily, while little Brighteyes hastened to hand round the music. The Doctor and his assistants once more took up their station at the violin to play the accompaniment, and soon the mournful strains of "Three Blind Mice" awoke the midnight echoes. With all their little mousey hearts, and all their shrill little mousey voices, they sang, and the line, "She cut off their tails with a carving knife," was given with such pathos that it ought to have brought tears to the eyes of the hardest-hearted cat that ever promenaded a back fence. But, alas! the now awakened Grimalkins were adamant, and just as the last verse was reached, and Miss Churchmouse was congratulating herself that in another five minutes she would be reveling in cream cakes, nuts, and cheese, a low hiss sounded from the alcove. Rodey Feartrap gave a sharp, discordant squeak, and all turned to see four green eyes glaring out of the shadows, and two furry figures preparing for a spring.

"Horror of horrors! run, scamper, flee!" and they did scamper, in a wild panic, tumbling over one another in their mad haste, and in a twinkling every gray whisker had disappeared through the hole in the wall, only, as a memento, poor Miss Mousey left the end of her graceful long tail behind her, held fast in Pussy Greeneye's little white pointed teeth. Sad and crestfallen, Miss Churchmouse wended her way home to her skimpy little house in the back pew, and never ceased regretting the feast of which she had only enjoyed the savory aroma. The Field mice concluded that country life in the free open meadows was better than the dangers of a city residence after all, while the rest of the company had to endure being well laughed at by all their friends. As for poor Miss Mousey Melody, she was sick in bed for a week, and ever after her sweet voice had an undertone of sadness never observed before, while she never attempted to give another musicale.

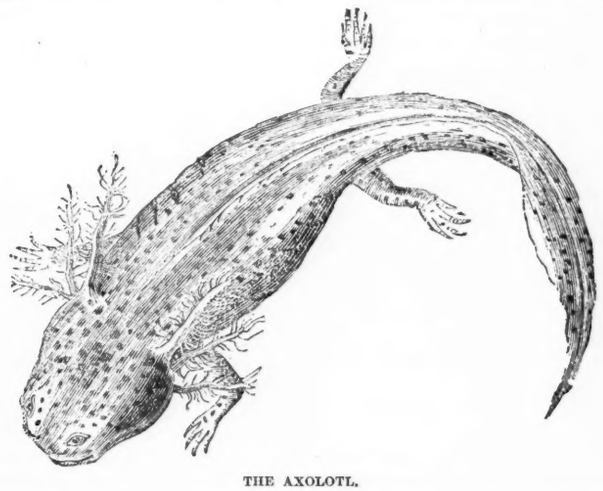
SOUNDS OF A SUMMER'S NIGHT.

DR. GEORGE THURBER.

A few years ago a gentleman of wide intelligence, but whose life had been hitherto passed in the city, moved to a country residence. In the country he met with much that was entirely new to him though quite familiar to our boys and girls who live in rural homes. One day he met me in the city, saying, "I wish you would tell me what the various creatures are that keep up so many noises these warm nights?" I told him that so many creatures contributed to these concerts that I could only tell him of a few of them. There are numerous night-flying insects—beetles, moths and others—that are on the wing, and such birds as night-hawks and whippoorwills are in chase after them, uttering their peculiar notes; owls are in pursuit of these smaller birds, and also catch mice, etc., and make more or less noise. We had a long and pleasant conversation about these sounds, which I am reminded about by Miss Alice Lancaster, Westchester Co., N. Y. She hears every spring some things which she is told are "peepers," and she wishes "The Doctor" to tell her what sort of creatures these are which are so noisy at night, and to tell her all about them. This "peeping" is but one of the summer-night sounds, as Miss Alice can learn if she will take a good seat at this "summer-night's concert." As the notice for an evening meeting used to be given out, the concert begins "at airly candle-light." The thrushes and other day singers begin about sunset and give their last song for the day, and gradually the birds one after another get quiet. But there will be now and then a sound, as of quarreling, as children sometimes do after they are put to bed. Then are heard the insects and birds in pursuit of them. Often, when the night gets intensely still, a chorus of bull-frogs will break out with a startling suddenness. But it is the smaller frogs which make the great noise with their peeping. I am sure that there are several kinds of frogs which take part in this chorus, but while I have a number of books that describe the different frogs, I have none, and do not know of any, that give their ways. The green frog found over a large part of the country no doubt does much of the peeping. The tree-toads or tree-frogs, though they generally inhabit trees, go to the water in spring to deposit their eggs; these are very noisy in the evening or on the approach of dull weather, and probably make in the Northern States the most of the peeping that my friend Alice asks about. There are several still smaller frogs, from less than an inch to one and a quarter inch long, called "Cricket Frogs." One of these, called the "Savannah Cricket," chirps in the day as well as night. The youngsters in the Southern States catch these little "crickets" and place them in a cage, where they become tamed and continue to chirp in confinement. One of these cricket frogs, "Pickering's Cricket Frog," is found in the New England and the Middle States; it is said to pipe all night in spring. You will find that there are different notes among the "peepers," but by which one of these several frogs any particular note is made I cannot tell you. "What do they peep for?" you will ask. As they peep most at their breeding time in spring, when they lay their eggs, it probably has to do with their mating, as we know that birds sing most at that time. It is very interesting to listen to the progress of this summer-night concert, but it will be found equally so to rise long before the sun, and listen to the concert that is given at the opening of the day, and note how one bird, insect, and one creature after another "greet the sun in his coming." Cannot some of our boys ascertain which frogs do the most of the peeping?

ABOUT THE AXOLOTL.

You will think that Axolotl is a strange name, especially when pronounced, as all Mexican names should be, as if written with an *h* instead of an *x*. The animal to which the name belongs is a native of the warmer parts of Mexico. It has much the appearance of a water-newt or salamander, rarely exceeding eleven inches in length, though when well fed it has been known to measure thirteen



THE AXOLOTL.

inches. Its color is brown, spotted with black. It has a long fin running the whole length of the tail and part of the body, which makes it a powerful swimmer, and its ability to climb smooth and perpendicular surfaces is something wonderful. The strangest thing about the axolotl is that it is provided with two distinct sets of breathing apparatus, lungs and gills. The frog, the newt, etc., in their early tadpole state have gills, but they lose these when they can use their lungs. But the axolotl retains its gills through life, and can live continuously in the water or on land. The engraving shows the gills as branched and fringed bodies, protruding from each side of the neck. The mouth is small compared to the size of the head. Though generally sluggish, the creature is at times voracious, when it destroys the eggs and young fry of fish in great numbers. It is provided with numerous very sharp and small teeth, and holds to its prey so firmly that it will allow itself to be dragged out of the water before it will let go its hold. Mr. W. August Carter, an English naturalist, in experimenting with the animal to learn its habits, found that it would live and increase in size when kept entirely in water through the summer. After this a perfectly dry place was prepared, the bottom of the receptacle being covered with earth in which worms were placed to afford the animal food. There are three or four different species of axolotl found in Mexico, New Mexico, and Texas, one being found as far north as Wyoming. They are known to the people who live where they are abundant as "fish with legs." In some of the lakes near the city of Mexico they are very numerous, especially in one lake about 3,000 feet above the level of the sea. They are caught here in June in large numbers, and at this season form the principal food of the poorer people. As an article of food they are highly esteemed. Naturalists are still puzzled over the axolotl, and it will probably be found to be not a complete animal, but rather the tadpole form of some animal of a higher order.

THE DOCTOR'S TALKS.

ANOTHER OF THE BUTTERCUP'S COUSINS

which you must have seen in abundance, looks less like a Buttercup than any others we have mentioned. The plant in question is the "Rue Anemone," and in early spring common almost everywhere. This is seen, in figure 1, of the natural size. To save space the root is not shown, but it consists of a few fleshy tubers, from which arise a few compound leaves, and a flower stem which is leafless, save several simple leaves in a whorl, forming an involucre below the flowers, which are in a few-flowered *umbel*. There are no petals, but the calyx of four to ten white and petal-like sepals forms the showy part of the flower. The stamens are numerous, the pistils, three to sixteen, one-ovuled. If you examine this plant carefully you will find that even in the wild state it produces double flowers, and various departures from the normal form. A young man of my acquaintance found a plant this spring in which the parts of the flowers were all green and leaf-like. The ordinary form and the double ones are pretty plants for the garden. The botanical name of the plant is *Thalictrum anemonoides*. The generic name, *Thalictrum*, is an ancient Greek one, the derivation of which is not well understood; the specific name, *anemonoides*, means resembling the *Anemone*. As month has followed month, the flowers have increased in numbers. You will have noticed that, as the season has advanced, the flowers, which in early spring were mostly white, or at least of pale tints, as the summer heats came on were of darker and more brilliant colors, until we found, in low places, the intense scarlet of the Cardinal Flower, and everywhere the rich yellows of the Golden-rods, and the purple—that royal color—of the Asters.

Fig. 1.—THE RUE ANEMONE.

Though we have described several of the cousins of the Buttercup, there are many others that we must pass by; but I think I have shown you how these resembled the Buttercup and how they differed from it. But however interesting are these cousins of the Buttercup, there are other kinds of flowers, not very closely related, that you wish to know something about. What shall we take up next? They should be common flowers, and those that are found over a wide extent of country.

VIOLETS GROW EVERYWHERE

and all young people like them. The odor of the Violet is one of the most popular of all the perfumes. But though we have so many native Violets, most of them are without any scent, and in those that have any fragrance at all, it is very faint and not like that we know as the "violet odor." It is the "Sweet Violet" (*Viola odorata*) of Europe that is commonly cultivated in our gardens that has the prized odor, and which is largely "forced" by florists in greenhouses and frames, to supply the winter demand. The perfume, sold as essence, extract, water, etc., comes from the European Violet in the South of France, where large fields of the flowers are cultivated

Fig. 2.—THE ARROW-LEAVED VIOLET.

for the purpose. Though our native Violets lack the perfume, they are not less interesting than the European in all other respects. Every youngster knows a Violet at sight. There is a shade of purple, known as violet-color; this is the color seen in the European flower. There are among our native Violets those with white and yellow flowers, as well as those of various shades of blue and purple. It is evident that you do not know the Violet by its odor or color. You evidently recognize it by the shape of the flowers. There are over twenty different Violets in all parts of the country (some being peculiar to the Pacific Coast), and every boy or girl will recognize any one of these as a Violet at sight. If asked how you do this, you will perhaps say: "By the shape of the flower."

Let us see what is the shape of the flower that is so peculiar as to say at once that it "is a Violet." Let us say that the Violets are all herbs, that is have no woody stems; though their roots live through the winter the leaves die. Our Violets are of two classes, the stemless (*acaulescent*) and those with stems (*caulescent*); in the stemless Violets the leaves and the flower stalks arise from a short underground root-stock, while those which have stems form larger plants by the spreading of these, which usually bear leaves and flowers all summer. The flowers are much alike, and it makes no difference which one we take for examination, so I select one of the most common and widely distributed.

THE ARROW-LEAVED VIOLET (*Viola sagittata*—Ait.).

I must tell you what that abbreviation "Ait." means, which follows the name of the plant. It stands for Aiton, an English botanist, who first described the species under this name. Figure 2 gives sufficient of the plant to show the shape of the leaves, on account of which the name was given. The leaves will be found to be very variable in shape, especially at the lower parts, on which account the plant has been called by several other names. The calyx and corolla have each five parts, sepals, and petals which are unequal in size; one of them, the lower one, being extended into

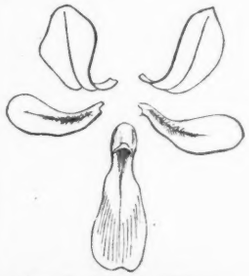


Fig. 3.—VIOLET PETALS.

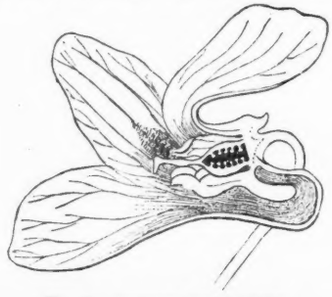


Fig. 4.—SECTION OF FLOWER.

a spur at the base, as in figure 3, shows the petals displayed in their relative positions and sizes. Figure 4 illustrates a flower divided lengthwise, and showing the pistil and stamens. THE DOCTOR.

THE AMOUNT OF FAT IN MILK.

To determine the fat in milk, a new method has been devised by F. G. Short, one of the Wisconsin Experiment Station's chemists. It is fully described in Bulletin No. 16, which our readers can get upon application to "Experiment Station, Madison, Wis." The theory of the process depends upon the following facts: "That when a mixture of milk and a strong alkali is heated to the temperature of boiling water for a sufficient time, the fat of the milk unites with the alkali and forms a soap which is dissolved in the hot liquid; at the same time the casein and albumen are disintegrated and become much more easily soluble. After the heating has continued for about two hours the mixture of milk and alkali becomes homogeneous and of a dark brown color. On the addition of an acid the soap is decomposed, the fatty acids are set free, and rise to the surface, while the albumen, casein, etc., are first precipitated and then dissolved. The insoluble fatty acids, thus obtained, constitute very nearly 87 per cent of the total fat in the milk."

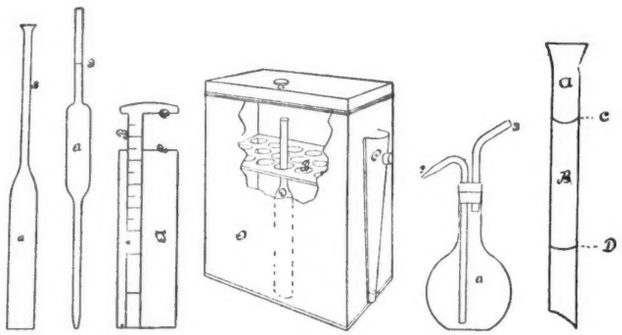


Fig.1. Fig. 2. Fig. 3. Fig. 4. Fig. 5. Fig. 6.

NEW APPARATUS FOR TESTING MILK.

The only apparatus required are lead-glass tubes (figures 1 and 6), pipettes (figure 2), scale (figure 3), a water-bath (figure 4), and a common wash-bottle (figure 5), most of which can be had of any dealer in chemists' supplies. Neither the process nor the apparatus is patented. The process is a modification of that of Marchand, whose instrument was called the lactobutyrometer. The new method is certainly ingenious and avoids some of the difficulties of Marchand's method by substituting acids and alkalies of definite and easily ascertained strength, for the alcohol and ether, the strength of which was difficult to ascertain, and yet upon the accurate knowledge of which the correct determination of the result depended.

The time required for the new process is considerable—three or four hours—and this seems to be a drawback. The process appears as yet to have quite as much scientific as practical interest, though large dairymen and creamerymen will be inclined to try it, and should by all means do so. Analysts with a laboratory at their command would doubtless prefer a direct quantitative determination of the fat, and a superintendent of a creamery, or other person having to determine the fat value of milk for commercial purposes, may after trial prefer to avail himself of the centrifugal method of milk testing by the lactocrite. This is yet to be proven, however, and the cheapness of Short's method is a great advantage contrasted with the expensive centrifugal. The practical accuracy of Short's process is well demonstrated in the Bulletin, but its claim to "simplicity" is rather far-fetched from the standpoint of the ordinary dairyman.

SOWING WINTER WHEAT.

JOSEPH HARRIS.

With a good grain drill, sowing wheat presents no difficulties. We have drills that sow with great accuracy and do the work in the most admirable manner, sowing commercial fertilizers at the same time. It is not the sowing that requires any special consideration, but the preparation of the land. August is one of the best months in the year for killing weeds, but quack, Canada thistles and other plants that spread from the roots can be killed only by plowing deep enough to get below the roots and then with the harrow and other implements so work and reduce the clods as to expose the roots to the sun. This is easier said than done. A crop of growing oats or barley draws out of the soil an immense quantity of water and leaves the soil dry, not only on the surface, but as deep as the land was previously plowed, or deeper. To plow this dry soil in August requires a good team and a fresh plow point, sometimes every day, or oftener. Some of our best farmers put three horses abreast to a sulky plow so arranged that on the hard spots the whole weight of the driver can be brought to bear on the beam of the plow and thus hold it to its work, while on the sandy portions the weight is thrown on to the wheels. I have seen admirable work done in this way by a boy, while with an ordinary plow it would have taxed the endurance of a strong man.

If the land is well plowed, it is seldom necessary to plow it again to the full depth. The subsequent working consists first of rolling and then harrowing, and if the harrows pull up clods, roll again, and keep rolling and harrowing till the clods are reduced to powder. If there are still clods and live thistle roots below, the land must be plowed again either witn a gang plow or with an ordinary plow. We have no better implement for this purpose than a good gang-plow making three narrow furrows at once and throwing up the clods where tne roller and harrows can reach them. It is while doing such work as this that the farmer wishes he had put three horses on a plow the fall previous and given his land a deep plowing after the corn was harvested. I hope he will not forget this wish the coming fall. We are not working our land enough.

HOW TO PATENT AGRICULTURAL INVENTIONS.

XENOS CLARK, MASSACHUSETTS.

Mechanical inventiveness is a natural trait of the American mind, like the instinct for trading, but while in trading the American and especially the Yankee's natural shrewdness stands him in good stead, it will help him but little when he comes to perfect and patent some invention that his ingenuity has originated. To convince him of this, however, is difficult. There is a certain course of mistakes gone through by almost every "self-made" inventor. The situation of the agricultural inventor is especially disadvantageous, since he is remote from the libraries, colleges, machinists, model-makers and professional men who can most assist him. He is apt to overestimate the importance of secrecy, and to underestimate the importance of knowledge. As for secrecy, the need for it is entirely removed by going before any notary public, and, at a small expense, making an affidavit to a short description and drawing of the invention. Knowledge about the invention is not so easily arranged, and yet nothing is so essential for the inventor as an understanding of what the busy world with its million brains has already done in the line of his discovery. Unless it is especially ingenious and novel, the probability is some one else has already patented it. Few understand the immense amount of inventing going on in the world. To visit the Patent Office at Washington and see its crowded rooms, its busy examiners, who are absolutely unable to keep up with the flood of patent applications which pour in from all over the country, and three-fourths of which are valueless, is a revelation to the inexperienced inventor. Perhaps the visitor has invented a seed-planter, and when he goes to the agricultural examiner's room to see about it, he finds that the examiner receives applications for seed-planters at the rate of three a week all the year round. At such information one begins to suspect that he may not be the first man who has ever made a seed-planter. But the railroad car-coupler, which is the standing joke of the Patent Office clerks, surpasses even this: twenty-three patents for car-couplers were issued in one month.

The largest publication in the United States is the monthly volume, big as an unabridged dictionary, in which the patents for each month are described. Every large library in the country receives these volumes, and it is by searching them, aided by an index, that one learns what has been done in this country in any given line of invention. As regards an agricultural invention, any large dealer in farm implements, or the editor of any good agricultural paper, may also be consulted with profit, and an intelligent machinist is always of aid. Ultimately the inventor, when he has done all that he can for himself, must rely on a patent solicitor; and the point is to find a good one. A pamphlet entitled "Rules of Practice," sent free on application to the United States Patent Office, describes the proceedings for obtaining a patent, and may lead some to attempt procuring their own patents; but this is very much like shoeing one's own horse—it is pretty certain to spoil the horse. A reliable patent solicitor is better, and will in the end prove less expensive.

AMERICAN AGRICULTURIST
FOUNDED IN 1842

AUGUST, 1888.

A Secretary of Agriculture.

An Executive Department of Agriculture is likely to be created by the present Congress, in place of the existing nondescript Bureau. This will be but tardy justice to an industry of such fundamental extent. To be sure, a Secretary of Agriculture in the President's Cabinet will confer no dignity upon our farmers, but American Agriculture can certainly confer a lasting dignity upon the office.

The best of the few objections urged against the proposed change is that it may make the Department even more the victim of politics than at present. Those who hold this idea would set the Bureau of Agriculture wholly apart from politics and have its work managed much on the plan of the Smithsonian Institute. But a Department devoted to our most comprehensive industry must be in a sense executive; it must deal directly with men and measures in order to fulfill its mission, rather than develop into a purely scientific Bureau apart from and far above the toiling masses whose taxes support it and for whose benefit it was established.

So long as our government is of and by the people, and therefore through political parties, this institution for improving the country's agriculture should be given a prominence that will insure its support according to the merits of the work done or to be done. Thus rival parties will compete in its support and in its most effective management. The farming public will be aroused in behalf of the Department, and will use their power to compel this competition. Although the Secretary of Agriculture may change with each Administration or with the ascendency of either party, the proper conduct of the Department will be insisted upon. The result should be a great and powerful impulse to American agriculture that is not within the power of the present Bureau and is far beyond the scope of a mere scientific institute.

As an earnest believer in our form of government, as a friend to all that would properly carry it out and a foe to centralization or other abuses that would pervert it, the AMERICAN AGRICULTURIST views the Executive Department of Agriculture as a wise development, and believes that the increasing intelligence and more active citizenship of the American farmer can be trusted to guide the Department aright.

Good Prices for Sheep.

The unusual firmness of the markets for mutton and dressed lambs which prevailed without a break during the winter of 1887–88, and which only commenced to decline late in May of this year, is a subject worthy of close attention from the flock masters of the country. What were the causes of this condition? One of them, undoubtedly, was a scarcity of well-matured, marketable sheep and lambs sufficiently forward to please Eastern consumers. The first signs of easement in the markets appeared with the rather liberal arrivals of Southern lambs; as soon as Kentucky was prepared to ship spring lambs the extreme tension of the markets gave way. Still prices were well sustained when quality was duly considered. This remarkable state of the sheep trade is more impressive when the lowness of beef is taken into account. During the second week of March, 1888, beeves reached $6.35 per cwt.; at the same date sheep sold as high as $8.75 per cwt., the quality of both meats being good. In May grass-fed Texas beeves sold as low as $3.25 per cwt.; the same day Texas sheep, shorn of the fleece, sold at $3 per cwt. The beeves averaged 835 pounds per head, the sheep averaged 69 pounds per head; both being very low in quality.

These facts would seem to show that flock masters should give more attention to increasing and improving these mutton producing sheep. The question of wool growing takes a wider range and must be regarded from an outside point. True it is that the placing on the British markets of Australian mutton at prices so low as to debar competition has closed the foreign demand which once existed in Europe for American mutton. Still a steady though circumscribed outlet is maintained with West Indian ports, where annually a select trade accepts a portion of our flocks, and always at satisfactory prices. In this country very heavy mutton is not liked by retail butchers, who deal chiefly in the choice parts; medium weight sheep cut to most advantage.

A small flock of some mutton breed on every farm could be kept mainly on feed which now goes to waste. Such flocks would add greatly to the agricultural wealth of the country.

Mississippi's Mistake.

Mississippi is just now making a strong effort to divert southward to her promising domain a part of the tide of immigration that still sets toward the Northwest. Such a movement should mark a new era in the regeneration of a magnificent agricultural State. But two acts of the last Mississippi Legislature, which have given it a wide and undesirable notoriety, will do more to retard immigration than a dozen State conventions can overcome. We refer to the financial crippling of Mississippi's excellent agricultural college through niggardly appropriations, and to the proposed tax on butter factories or creameries. Contrast this with Dakota, which has established on a liberal basis two agricultural and mechanical colleges without waiting for national aid, both of which are crowded with brainy young men and women. Her entire school system is managed and endowed with similar ability and liberality. With the same public spirit in behalf of effective and practical educational facilities, Mississippi or any of the Southern States would soon secure many of the people who for these and companion advantages now seek the sterner Northwest.

And what shall we say of a State that taxes at the outset a new industry which, properly fostered, can add millions to her permanent wealth? A liberal bounty rather than a tax should be the reward of every creamery in the South. For the moment that dairying is developed in Mississippi and her sister States—and they all have large areas adapted to it—that moment is introduced better farming, more grass and forage crops, more manure, diversified crops—independence of King Cotton and the mortgage system. The plea that Mississippi is poor in purse is no excuse for the policy criticised. Agriculture must ever be her greatest industry. The more liberally she encourages it, and the more snap and vim she shows in agricultural and educational affairs, the greater will be her reward.

This matter is not one of political or sectional feeling. The AMERICAN AGRICULTURIST recognizes neither party nor sectional lines; and what we have said applies with equal force to every State that has been misled in these matters as has Mississippi. The fact that progressive Mississippians are repudiating these acts of her Legislature, and demanding a more liberal policy, may show that it needs only some such egregious mistake as this to arouse the people to earnest reforms.

Good Nights to Sleep.

The weather men say that notwithstanding the hot days of the month just past, there were an unusual number of cool and comfortable nights. For this no one should be more thankful than the toiling farmer. A hard day's work under a scorching sun is wearisome and exhausting to any man, even to one in rugged health, and he should have a night of refreshing sleep to invigorate him for the next day's labor. This is out of the question in the large cities, where the brick dwellings become so thoroughly heated by day that they are never cool at night; so that a "spell" of hot weather, without relief, always causes an alarming increase in the death rate. Right here the farmer is far better circumstanced than any dweller in a city, for the farmer has not only the pure, country air during the day but usually a refreshing breeze at night. It is the boast of California and some other States that their nights are so cool that one or two blankets are always needed for comfort. While this is by no means true in the Eastern States, there have been few nights, thus far this year, when a healthy man who by hard work had earned a night's repose, could not enjoy it.

Dealing Direct.

The Connecticut State Grange is trying to arrange with certain Western farmers' organizations for direct shipments of grain from the farms of the producers in Iowa, Nebraska, Dakota and elsewhere, to the farms of the consumers in the Nutmeg State. This effort to abolish middlemen and deal direct, is one of vast importance to the farmers of both the East and the West. Some of the Dakota wheat growers have been very successful during the past two years in their combinations to market their crop independent of the elevator ring. If to this partial success can be added direct shipment in bulk to Eastern consumers, there should be a saving of several cents a bushel at both ends of the line. The plan, to be feasible, must be conducted through an organization like the Grange in the East and the Alliance in the West. By this means large quantities of grain can be secured from the grower, and disposed of for cash among

the subordinate granges of the East. These are the essentials to the success of the scheme—large shipments and cash payments. There is here a wide field for usefulness for efficient organizations.

Kitchen and Market Garden in August.

Much of the success in growing cabbage and cauliflower is due to keeping the soil well stirred. One of the best implements for this purpose is a long-toothed steel rake; it will kill the weeds while they are small, and keep the surface of the soil in excellent condition.... The same implement will do good work among other plants; indeed, we use it in preference to any other tool in hand-weeding. It does more execution for the amount of force expended than any hand hoe. In a well-managed garden the land is always growing a crop of some kind. If there are no animals that can consume a fodder crop, then some quick-growing crops like buckwheat may be sown to be turned under as a green manure; beans or peas are still better fertilizers, as is the Southern cow pea.... By a proper management of the sweet corn crops, an excellent supply of fodder may be secured for the cow in winter. When the ears are taken off for use or for market, the stalks are still succulent, if they are cut up at once and cured. The fodder will be much more nutritious than that upon which the corn had completed its growth and ripened; so one gets double returns. The crop of ears, or the crop of fodder, should each give a profitable return.... Cucumbers for pickles may get beyond the desirable size, if not watched daily, unless it is desired to save seeds (and this is one of the things in which careful selection of his own seeds pay). As soon as any of the fruits get too large, cut them away, unless it is preferred to use them for large pickles.... Sow Refugee beans for pickling, and they will also be very acceptable as a late table supply. As soon as the vines of lima beans have grown to the tops of the poles they begin to reach out and sweep around in a most intelligent manner in search of something to cling to. Nipping the ends of the vines stops this waste of energy, and diverts to producing more flowers and fruit.... All roots will grow rapidly, now that they are well established; keep the cultivator in motion between the rows so long as it can be done without tearing the leaves. Thin the later grown roots; if in doubt if this pays leave a part of a row unthinned, and compare the results at harvest time.... Continue to set out celery plants on rich soil in rows three feet apart, setting the plants six inches apart in the rows, press the soil firmly against the roots..... Egg plants should be encouraged by frequent hoeing and a dressing of some good fertilizer or liquid manure. If the heavy fruit rests upon the ground, place a wisp of straw or hay or a bit of board under it to keep it away from the soil.... Melons are said to ripen more evenly if turned frequently; if the vines have set more fruit than they will be likely to ripen, allow it to grow until of the desired size and use for stuffed pickles. If not wanted for this use, cut them away as soon as set.... As soon as the tops of onions fall over, pull them, throwing three rows together, laying the tops all one way for convenience in handling; let them lie a few days until the outer skin is dry and cured, when they may be stored in a cool loft.... In digging early potatoes do not expose them to the sun. The slighest greening injures their flavor.... Make ketchup, tomato sauce, etc., while the fruit is in perfection. If, as usual, much more fruit is set than will be likely to ripen, cut away the green fruit, unless a quantity is needed for pickling in the green state.... Sow turnips, Yellow Stone, Aberdeen, Cow Horn, and later the Purple Strap-leaf.

Government Aid to Agriculture.

The Agricultural Appropriation bill for the fiscal year ending June 30, 1889, has finally been enacted by Congress in commendable shape. We are especially gratified that not only does it include $585,000 for experiment stations under the Hatch Act—$15,000 to one station each in thirty-eight States and in Dakota—but also carries $10,000 for an Experiment Station Division in the Agricultural Department. Such a central headquarters can do much to promote efficient work among the stations, and can compile their most important results for popular distribution. The brief experience under the Hatch Act indicates the wisdom of some central control to a limited extent, which without friction should systematize some of the work that various stations are now duplicating at haphazard. This idea was not included in the original act, but is likely to be enacted by the Fifty-second Congress. Certainly some effort should be made to prevent the waste or errors made by some of the stations, as in Missouri since Prof. Sanborn has been displaced. Such abuses react against all the institutions under the Hatch Act.

Other features of the appropriation bill that are praiseworthy are the slight increase in salaries of the chemists, liberal provision for grass experiment stations, and for investigating peach yellows and hog cholera. The appropriation of $30,000 for silk culture is open to the criticism that small practical results have as yet been attained by such expenditures. On the other hand, it is far better that the government carry this test to a finality, and conclusively demonstrate whether silk culture can be made profitable, than that many poor people should spend time and money in this work. The same view may be taken of the expensive sorghum sugar investigations, which, however, are about to bear fruit. It is quite as necessary that the Department prove that a certain industry is not practical, and thus prevent the masses from embarking in it to their loss, as it is that the government should work out the successful development of new ideas in farming. The much-laughed-at tea farm was worth all it cost by proving that there was no money in the tea crop. But there is small ground for the past and present system of seed distribution, and it is gratifying to have assurances from both House and Senate that it will be reformed by being largely transferred to the respective State experiment stations.

The American Sussex Association has just been organized with these officers: President, H. C. Burleigh, of Vassalboro, Me.; vice-president, John O. Rollins, of Stonington, Ill.; secretary, Overton Lea, of Nashville, Tenn.; treasurer, S. K. Knox, of Independence, Ia. The object of the association is to collect, revise, preserve and publish the history and pedigrees of pure-bred Sussex cattle. This breed has been very popular in England for many years on account of its early maturity and superior quality of beef.

The Insect World.

Potato Beetles in Danger.—An Indiana correspondent sends us the following joyful communication: "I noticed yesterday an attack on the larvæ of the Colorado potato bug by a small black beetle. The beetles were in large numbers and made quick work of the larvæ. Let us hope that at last we have an aid in our fight with this Western curse."

Obstinate Asparagus Beetles.—Frederick de Pooter, Westchester Co., N. Y., says: "I have tried hellebore, sulphur, Paris green, slug shot, soot, lime and ashes, one after another, for destroying the worms which eat the young asparagus. All were useless, and for three years I have been unable to grow these plants." If the insecticides named have been applied properly we cannot understand why they should not have had the desired effect. As a last resort, we would recommend Buhach, of which we know, from actual experience, that it will kill the larvæ of asparagus beetles, when liberally dusted over them.

Grapevine Caterpillars.—J. Boebinger, Hamilton Co., O.: The butterfly you sent was so badly crushed that we are unable to identify it. The caterpillars, you say, infest grapevines and are very destructive. There are various species of caterpillars which attack the leaves of grapevines, but we do not know of any way of destroying them rapidly except by dusting the vines with some reliable insecticide. There is, however, some danger in using poisons after the fruit is set, and it is better to avoid them if possible. Perhaps the better way of getting rid of the caterpillars is to whip them off with a brush or broom and then trample them to death.

Cherry Slugs.—Frederick Hafke, Kings Co., N. Y.: The "small insect resembling a snail," found on the leaves of your pear tree, are the larvæ of a small shiny black fly, known as *Selandria cerasi*. The larvæ or slugs are twenty-footed, and are covered with a sticky olive-colored slime. These slugs, if not disturbed, will eat out all the softer parts of the leaves of both pear and cherry trees, leaving only the wavy mid-ribs and veins, thereby preventing the leaves from performing their natural functions. Fortunately for the fruit-grower these pests are readily destroyed by dusting them and the leaves they are feeding upon with dry lime or ashes. If the trees are too tall for throwing the lime over them by hand, take an old or new tin can and punch the bottom full of holes; then fill with lime and fasten to the end of a pole long enough to reach the top of the tree. With this home-made duster you can readily exterminate the pear slugs.

The Cotton Worm (*Aletia argillacea*) can be effectively fought with Paris green. This statement is based on experience at the Mississippi Agricultural College farm and elsewhere, as given in Bulletin No. 2 from the Mississippi Experiment Station. Mix one pound of Paris green with ten pounds of flour, and use ordinary cheese-cloth for sacks. Make the sack small, and fasten one lengthwise to each end of a light pole, which should be two feet longer than the distance between the cotton rows. Fill the sack with the poison, and mounting a mule ride between the rows of cotton, jolting the pole so that the poison can be scattered continuously on the plant. Eleven pounds of the mixture per acre, applied August 10, kept the crop at the college free from worms, but an earlier application is desirable. Use flour, as it forms a paste which makes the poison stick. Two or three times as much flour may be used with one pound of poison and will insure an evener distribution. Apply when there is no wind, and when the leaves are wet with rain or dew, repeating after heavy rains. The expense need not exceed seventy-five cents per acre for each application.

Apple Tree Borers.—C. W. Wilson, Walker Co., Ga.: The bark near the ground on young apple trees dying is probably due to the work of a grub known as the "round-headed apple-tree borer" (*Saperda bivittata*). The parent beetles come out early in spring, the females depositing their eggs in the cracks of the bark near the ground, where they soon hatch, and the young grubs boring through the bark and into the young wood underneath. The grubs feed mainly upon the soft half-formed wood just under the bark and this causes the latter to die and decay. Surrounding the base of the stems with tar paper, cloth, tin or any similar material, will usually prevent the depositing of eggs on the bark, but the best preventive is to carefully examine the trees every summer and cut out and destroy all the worms found. Another and very different beetle deposits her eggs up among the larger branches. The name of this beetle is *Chrysobothris femorata*, and its grub is known as the "flat-headed apple-tree borer," the rather small grub having an enormously large flat head. This grub feeds entirely on the soft matter between the bark and wood, separating the two in its work, causing the bark to die off in patches of an inch to several inches in extent. Sometimes the grubs will completely girdle a large branch and cause its death. This latter species of beetle appears from early spring until late in autumn and for this reason is far more difficult to control or exterminate in an orchard than the "round-headed borer." Whitewashing the larger branches and stems of the trees, or smearing once or twice during the summer with soft soap, are among the best known preventives. But we would also advise careful search for the grubs and killing all that you find under the patches of dead bark.

State, County and Other Fairs in 1888.

PREPARED EXPRESSLY FOR THE AMERICAN AGRICULTURIST.

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STATE, PROVINCIAL, Etc.

Am. Institute	New York	Oct. 3-8
Arkansas	Pine Bluff	Oct. 9-13
Buffalo	New York	Sept. 4-14
California	Sacramento	Sept. 3-15
Colorado	Pueblo	Oct. 2-6
Connecticut	Meriden	Sept. 11-14
Dakota	Huron	Sept. 24-30
Del. & Md. Peninsula 1st Horticultural Exhibition	Wilmington	Sept. 18-21
Delaware	Dover	Sept. 24-29
Georgia	Macon	Oct. 10-19
Illinois	Olney	Sept. 24-28
Illinois Fat Stock	Chicago	Nov. 13-24
Indiana	Indianapolis	Sept. 17-22
Iowa	Des Moines	Aug.31-Sep.7
Kansas	Topeka	Sept. 17-22
Kentucky	Lexington	Aug. 28-Sep.1
Louisiana	Shreveport	Nov. 5-10
Maryland	Hagerstown	Oct.16-19
Maine	Lewiston	Sept. 11-14
Mass. Bay State	Springfield	Oct. 4-9
Mass. Horticult'l	Boston	Sept. 18-21
Michigan	Jackson	Sept. 10-14
Minnesota	St. Paul	Sept. 10-15
Mississippi	Jackson	Oct. 8-13
Missouri	St. Louis	Oct. 1-6
Montana	Helena	Aug. 20-25
Nebraska	Lincoln	Sept. 7-14
N. England, Mass.	Worcester	Sept. 4-7
N. Hamp. Grange	Tilton	Sept. 12-14
New Jersey	Waverly	Sept. 17-21
New York	Elmira	Sept. 17-22
North Carolina	Raleigh	Oct. 16-20
Ohio	Columbus	Sept. 4-19
Ohio Centennial	Cincinnati	July 4-Oct. 27
Ontario, Provin'l	Kingston	Sept. 10-15
Oregon	Salem	Sept. 17-21
Pennsylvania	Philadelphia	Sept. 3-15
Rhode Island	Providence	Sept. 24-28
South Carolina	Columbia	Nov. 12-16
Tennessee	Nashville	Sept. 22-29
Texas	Dallas	Oct. 11-31
Vermont	Burlington	Sept. 11-14
Virginia	Richmond	Oct. 3-Nov. 21
West Virginia	Wheeling	Aug. 27-31
Wisconsin	Madison	Sept. 17-21
Wisconsin Indus.	Racine	Sept. 4-7
Wyoming	Cheyenne	Sept. 25-28

COUNTY AND DISTRICT FAIRS.

ALABAMA.

Limestone	Athens	Oct. 3-6
Madison	Huntsville	Oct. 9-13
Montgomery	Montgomery	Oct. 22

ARIZONA.

Maricopa	Phœnix	Oct. 15-20

ARKANSAS.

Independence	Batesville	Oct. 23-26
Jefferson	Pine Bluff	Oct. 9-13
Phillips	Helena	Oct. 16-20
White	Judsonia	Oct. 10-12

CALIFORNIA.

Butte	Chico	Aug. 21-25
El Dorado	Placerville	Aug. 21-25
Lassen	Susanville	Sept. 24-28
Santa Clara	San Jose	Sept. 24-29
San Joaquin	Stockton	Sept. 18-29
Siskiyou	Yreka	O . 3-7
Sonoma	Santa Rosa	Aug. 3-18
Yuba	Marysville	Aug. 28-Sep. 1

COLORADO.

Gunnison	Gunnison	Oct. 1-6
Larimer	Ft. Collins	Sept. 11-14
Weld	Greeley	Oct. 2-5

CONNECTICUT.

Fairfield	Danbury	Oct. 2-6
Fairfield	Norwalk	Sept. 18-21
Hartford	Bristol	Sept. 24-28
Hartford	Cherry Park, Collinsville	Sept. 19-20
Litchfield	New Milford	Sept. 11-13
Litchfield	Watertown	Sept. 18-20
Middlesex	Chester	Oct. 3
Middlesex	Clinton	Oct. 10
New Haven	Meriden	Sept. 11-14
New Haven	Guilford	Sept. 26
New London	Norwich	Sept. 18-20
Windham	Brooklyn	Sept. 18-20
Windham	Willimantic	Sept. 26-28

CONNECTICUT DISTRICT.

Hartford	Southington	Sept. 18-20
Hartford	Simsbury	Oct. 3-4

DAKOTA.

Beadle	Mitchell	Oct. 24-30
Charles Mix	Castalia	Sept. 17-19
Grant	Millbank	Oct. 2-4
Spink	Ashton	Sept. 18-21
Turner	Parker	Sept. 19-21

IDAHO.

Bingham	Eagle Rock	Sept. 13-15

ILLINOIS.

Adams	Camp Point	Sept. 3-7
Boone	Belvidere	Sept. 4-7
Brown	Mt. Sterling	Aug. 27-31
Bureau	Princeton	Sept. 11-15
Carroll	Mt. Carroll	Sept. 10-14
Champaign	Champaign	Aug. 21-24
Christian	Assumption	Sept. 5-7
Christian	Pana	Sept. 11-15
Coles	Charleston	Sept. 11-15
Crawford	Robinson	Sept. 11-15
Cumberland	Toledo	Sept. 18-21
DeKalb	Sycamore	Sept. 11-14
DeWitt	Clinton	Sept. 10-14
DeWitt	Farmer City	Aug. 28-31
Douglas	Camargo	Sept. 18-21
DuPage	Wheaton	Sept. 11-13
Edgar	Paris	Sept. 3-7
Edwards	Albion	Aug. 18-21
Effingham	Watson	Sept. 4-7
Fayette	Vandalia	Sept. 18-21
Ford	Piper City	Sept. 18-21
Franklin	Benton	Sept. 19-22
Fulton	Canton	Sept. 4-7
Fulton	Avon	Sept. 18-21
Gallatin	Shawneet'n	Aug.28-Sep.1
Greene	Carrollton	Oct. 16-19
Hancock	Carthage	Sept. 10-14
Hancock	Warsaw	Aug. 21-24
Hardin	Elizabethtown	Aug. 7-10
Henderson	Biggsville	Sept. 4-7
Henry	Kewanee	Sept. 3-7
Henry	Cambridge	Aug. 27-31
Iroquois	Watseka	Aug. 13-17
Jasper	Newton	Sept. 11-14
Jefferson	Mt. Vernon	Sept. 18
Jersey	Jerseyville	Oct. 9-12
Jo Daviess	Warren	Sept. 18-22
Jo Daviess	Galena	Sept. 2-5
Kankakee	Kankakee	Sept. 18-21
Kendall	Yorkville	Sept. 11-14
Knox	Knoxville	Sept. 3-7
Lake	Libertyville	Sept. 19-22
Lake	Waukegan	Sept. 10-15
LaSalle	Mendota	Sept. 3-8
Livingston	Fairbury	Sept. 2-7
Logan	Lincoln	Aug. 27-31
Logan	Atlanta	Sept. 4-7
Macoupin	Carlinville	Sept. 4-7
Marshall	Wenona	Sept. 10-14
Massac	Metropolis	Oct. 10-13
McDonough	Macomb	Aug. 27-31
McHenry	Marengo	Sept. 18-21
McHenry	Woodstock	Sept. 11-14
McLean	Bloomington	Sept. 11-14
Menard	Petersburg	Sept. 4-7
Mercer	Aledo	Sept. 18-21
Montgomery	Hillsboro	Sept. 18-21
Moultrie	Sullivan	Sept. 3-7
Ogle	Oregon	Sept. 18-21
Ogle	Rochelle	Sept. 14-17
Peoria	Dunlap	Sept. 5-7
Perry	Pinckneyville	Oct. 2-5
Piatt	Monticello	Aug. 13-17
Pike	Griggsville	Aug. 14-17
Pike	Pittsfield	Aug. 21-24
Pope	Golconda	Oct. 2-5
Randolph	Chester	Sept. 25-28
Rock Island	Coe	Sept. 5-7
Rock Island	Port Byron	Sept. 5-7
Saline	Eldorado	Aug. 21-24
Saline	Harrisburg	Oct. 2-5
Schuyler	Rushville	Aug. 21-24
Shelby	Shelbyville	Sept. 18-22
St. Clair	Belleville	Sept. 11-14
Stark	Toulon	Sept. 11-14
Stark	Wyoming	Aug. 21-24
Stephenson	Freeport	Sept. 3-7
Tazewell	Mackinaw	Aug. 28-31
Tazewell	Delevan	Sept. 10-14
Union	Anna	Aug. 28-31
Union	Jonesboro	Sept. 11-14
Vermilion	Catlin	Aug. 21-25
Wabash	Mt. Carmel	Sept. 5-8
Warren	Monmouth	Sept. 11-14
White	Carmi	Sept. 4-8
Whiteside	Morrison	Sept. 4-7
Whiteside	Albany	Aug. 28-31
Williamson	Marion	Sept. 25-28
Winnebago	Rockford	Aug. 27-31

ILLINOIS DISTRICT.

Hancock	La Harpe	Sept. 3-7
Iroquois	Milford	Aug. 21-24
Jackson	Carbondale	Oct. 8-12
McDonough	Bushnell	Aug. 21-24
Vermilion	Hoopeston	Aug. 27-31
Woodford	El Paso	Sept. 17-21

INDIANA.

Allen	Fort Wayne	Sept. 4-7
Blackford	Hartford City	Aug. 22-25
Boone	Lebanon	Aug. 20-24
Cass	Logansport	Aug. 27-31
Clark	Charlestown	Sept. 5-10
Clinton	Frankfort	Aug. 27-31
Daviess	Washington	Oct. 1-6
Dearborn	Lawrenceburg	Aug.21-25
Decatur	Greensburg	Aug. 28-31
Delaware	Muncie	Aug. 21-25
Elkhart	Goshen	Sept. 4-7
Fulton	Rochester	Sept. 5-8
Gibson	Princeton	Sept. 10-15
Grant	Marion	Aug. 28-31
Greene	Linton	Oct. 1-6
Hamilton	Noblesville	Aug. 27-31
Hancock	Greenfield	Aug. 21-24
Harrison	Corydon	Aug. 27-31
Henry	New Castle	Aug. 14-18
Howard	Kokomo	Sept. 10-15
Huntington	Huntington	Sept. 25-29
Jackson	Brownstown	Sept. 18-21
Jackson	Seymour	Sept. 11-15
Jasper	Rensselaer	Aug. 21-24
Jay	Portland	Sept. 25-28
Jefferson	Wirt Station	Sept. 4-6
Jennings	No. Vernon	Aug. 7-10
Knox	Vincennes	Oct. 8-13
Lagrange	Lagrange	Sept. 24-27
Lake	Crown Point	Sept. 18-21
Laporte	Laporte	Oct. 2-6
Lawrence	Bedford	Sept. 11-15
Madison	Anderson	Sept. 3-7
Monroe	Bloomington	Sept. 4-7
Montgomery	Crawfordsville	Sept. 10-14
Newton	Morocco	Sept. 11-14
Noble	Ligonier	Sept. 11-14
Parke	Rockville	Aug. 20-24
Perry	Rome	Oct. 1-5
Pike	Petersburg	Sept. 5-7
Porter	Valparaiso	Sept. 21-24
Posey	New Harmony	Sept.17-21
Randolph	Winchester	Aug. 28-31
Ripley	Osgood	Aug. 14-18
Rush	Rushville	Sept. 11-15
Shelby	Shelbyville	Sept. 4-8
Spencer	Rockport	Sept. 3-8
Steuben	Angola	Sept. 18-21
Sullivan	Sullivan	Sept. 10-15
Tippecanoe	Lafayette	Sept. 3-8
Tipton	Tipton	Aug. 13-17
Vermillion	Eugene	Aug. 20-24
Vigo	Terre Haute	Aug. 27-31
Wabash	Wabash	Sept. 11-14
Warren	West Lebanon	Aug.14-19
Warrick	Boonville	Aug.27-Sept. 1
Washington	Salem	Aug. 27-31
Wayne	Dalton	Sept. 11-14

INDIANA DISTRICT.

Dekalb	Waterloo	Sept. 24-28
Fountain	Covington	Sept. 24-28
Grant	Fairmount	Sept. 24-28
Hamilton	Carmel	Aug. 21-24
Hamilton	Arcadia	Aug. 7-11
Hamilton	Sheridan	Sept. 3-7
Hendricks	No. Salem	Sept. 3-7
Henry	Middletown	Aug. 7-10
Henry	Knightstown	Aug. 28-31
Howard	Poplar Grove	Oct. 1-5
Huntington	Warren	Sept. 4-8
Jackson	Seymour	Sept. 11-15
Jasper	Francisville	Sept. 25-28
Jasper	Remington	Aug. 28-31
Johnson	Urmeyville	Oct. 4-6
Kosciusko	Warsaw	Sept. 10-15
Marion	Acton	Aug. 28-31
Marion	Lawrence	Sept. 4-7
Martin	Loogootee	Sept. 25-29
Miami	Macy	Sept. 26-29
Miami	Xenia	Aug. 21-24
Montgomery	New Ross	Aug. 13-18
Noble	Kendallville	Oct. 1-5
Orange	Orleans	Sept. 26-29
Parke	Bridgeton	Aug. 20-24
St. Joseph	So. Bend	Sept. 11-14
Switzerland	E. Enterprise	Sept. 11-14
Vermilion	Newport	Oct. 1-5
Wabash	No. Manchester	Oct. 2-5
Washington	Pekin	Sept. 11-15
Wayne	Dalton	Sept. 11-14

IOWA.

Adams	Corning	Sept. 17-22
Audubon	Audubon	Sept. 11-14
Benton	Vinton	Sept. 18-21
Boone	Ogden	Sept. 11-14
Buchanan	Independence	Sept.11-14
Buena Vista	Alta	Sept. 12-14
Butler	Allison	Sept. 11-13
Calhoun	Rockwell City	Sept. 25-27
Cass	Atlantic	Sept. 11-14
Cerro Gordo	Mason City	Sept. 18-20
Chickasaw	New Hampton	Sept. 12-14
Clarke	Osceola	Sept. 11-14
Clay	Spencer	Sept. 19-21
Clayton	Garnerville	Sept. 25-28
Clayton	National	Sept. 25-28
Clinton	DeWitt	Sept. 18-21
Crawford	Denison	July 31-Aug. 2
Dallas	Adel	Sept. 18-21
Davis	Bloomfield	Aug. 21-24
Decatur	Leon	Sept. 26-28
Delaware	Manchester	Sept. 11-14
Des Moines	Burlington	Sept. 10-14
Fayette	West Union	Sept. 4-7
Floyd	Charles City	Sept. 12-14
Franklin	Hampton	Sept. 11-14
Greene	Jefferson	Aug.28-31
Grundy	Grundy Center	Sept.11-13
Guthrie	Menlo	Sept. 25-28
Guthrie	Guthrie Cen.	Sept. 25-28
Hancock	Britt	Sept. 18-20
Hardin	Eldora	Sept. 18-21
Harrison	Missouri Valley	Oct. 1-4
Henry	Mt. Pleasant	Aug. 28-30
Howard	Cresco	Sept. 11-14
Humboldt	Humboldt	Sept. 12-14
Iowa	Marengo	Sept. 13-15
Jackson	Maquoketa	Aug. 21-24
Jasper	Newton	Sept. 11-14
Jefferson	Fairfield	Sept. 18-20
Johnson	Iowa City	Aug. 27-30
Jones	Monticello	Aug. 27-31
Keokuk	Sigourney	Aug. 28-31
Kossuth	Algona	Sept. 18-20
Lee	Donnellson	Sept. 5-7
Louisa	Wapello	Aug. 28-31
Lucas	Chariton	Sept. 12-14
Madison	Winterset	Sept. 24-27
Mahaska	Oskaloosa	Aug. 21-24
Marion	Knoxville	Aug. 28-31
Mills	Malvern	Sept. 18-20
Mitchell	Osage	Sept. 12-14
Montgomery	Red Oak	Sept. 10-14
Osceola	Sibley	Sept. 18-20
Page	Clarinda	Sept. 3-7
Palo Alto	Emmetsburg	Oct. 3-5
Polk	Des Moines	Aug. 31-Sep. 7
Ringgold	Mt. Ayr	Sept. 7-12
Sac	Sac City	Aug. 28-30
Shelby	Harlan	Sept. 17-20
Story	Nevada	Sept. 11-14
Taylor	Bedford	Sept. 11-14
Union	Afton	Sept. 11-14
Van Buren	Keosauqua	Sept. 12-14
Wapello	Ottumwa	Aug. 13-17
Warren	Indianola	Oct. 2-5
Washington	Washington	Aug. 21-24
Wayne	Corydon	Aug. 27-31
Webster	Fort Dodge	Sept. 11-14
Winnebago	Forest City	Sept. 25-26
Winneshiek	Burr Oak	Aug. 28-31
Wright	Clarion	Sept. 4-7

IOWA DISTRICT.

Adams	Nevinville	Sept. 11-14
Appanoose	Moulton	Sept. 11-14
Carroll	Manning	Sept. 11-14
Clayton	Strawberry Pt	Sept.18-21
Cedar	Mechanicsv'le	Sept.11-14
Harrison	Dunlap	Sept. 26-28
Henry	Winfield	Sept. 4-7
Keokuk	Richland	Aug. 28-31
Lee	West Point	Sept. 11-14
Lee	Keokuk	Aug. 7-10
Mahaska	New Sharon	Aug. 21-23
Muscatine	West Liberty	Sept.11-13
O'Brien	Sheldon	Sept. 5-7
Page	Shenandoah	Sept.11-14
Poweshiek	Brooklyn	Aug. 30-Sept.1
Sac	Odebolt	Sept. 17-20
Scott	Mt. Joy	Sept. 11-14
Tama	Traer	Sept. 11-13
Van Buren	Milton	Aug. 28-31
Wapello	Agency	Oct. 2-5
Wayne	Lineville	Sept. 11-14
Wayne	Seymour	Sept. 24-28

KANSAS.

Anderson	Garnett	Aug. 28-31
Bourbon	Fort Scott	Sept. 11-14
Brown	Hiawatha	Sept. 4-7
Chase	Elmdale	Sept. 26-28
Cherokee	Columbus	Oct. 11-14
Cheyenne	Wano	Sept. 15-18
Cheyenne	St. Francis	Sept. 26-29
Clay	Clay Center	Sept. 4-7
Coffey	Burlington	Sept. 10-14
Cowley	Winfield	Sept. 3-7
Crawford	Girard	Sept. 25-28
Davis	Junction City	Sept. 20-22
Dickinson	Hope	Sept. 18-21
Doniphan	Troy	Sept. 25-28
Elk	Howard	Sept. 19-21
Ellis	Hays City	Oct. 2-4
Franklin	Ottawa	Sept. 24-28
Harvey	Newton	Sept. 11-14
Jefferson	Oskaloosa	Sept. 11-14
Jewell	Mankato	Sept. 18-21
Linn	LaCygne	Sept. 4-7
Linn	Mound City	Sept. 17-21
Linn	Pleasanton	Sept. 11-14
Marion	Peabody	Sept. 5-7
Mitchell	Cawker City	Sept. 25-28
Montgomery	Independence	Sept. 4-8
Morris	Council Grove	Sept.25-28
Nemaha	Seneca	Sept. 18-21
Nemaha	Sabetha	Aug. 28-31
Osage	Burlingame	Sept. 11-14
Osborne	Osborne	Sept. 11-14
Ottawa	Minneapolis	Sept. 25-28
Phillips	Phillipsburg	Sept. 18-21
Pottawatomie	Wamego	Sept. 4-7
Pratt	Pratt City	Sept. 4-7
Reno	Hutchinson	Oct. 2-5
Riley	Manhattan	Sept. 18-21
Rooks	Plainville	Sept. 25-28
Rush	La Crosse	Sept. 19-21
Saline	Salina	Sept. 25-28
Sedgwick	Wichita	Aug. 27-Sept. 1
Smith	Smith Center	Sept.19-21
Washington	Greenleaf	Sept. 12-14
Woodson	Neosho Falls	Sept. 24-29

KENTUCKY.

Adair	Columbia	Aug. 21-24
Anderson	Lawrencebu'h	Aug. 21-24
Bourbon	Paris	Aug. 7-8
Boyle	Danville	Aug. 7-10
Campbell	Alexandria	Sept. 4-8
Christian	Hopkinsville	Oct. 3-6
Crittenden	Marion	Oct. 16-20
Daviess	Owensboro	Oct. 9-14
Hardin	Elizabethtown	Sept.11-14
Hart	Horse Cave	Sept. 18-21
Henderson	Henderson	Oct. 2-6
Hopkins	Madisonville	Oct. 10-13
Jefferson	Fern Creek	Aug. 28-30
Madison	Kirksville	July 27-28
Mason & Bracken	Germantown	Oct. 10-13
Mason	Maysville	Aug. 24-25
Mercer	Harrodsburg	Aug. 14-17
Muhlenberg	Greenville	Oct. 17-20
Nelson	Bardstown	Sept. 4-8
Ohio	Hartford	Oct. 3-6
Pulaski	Somerset	Sept. 11-14
Union	Uniontown	Aug. 14-18
Shelby	Shelbyville	Aug. 28-31
Warren	Bowling Green	Sept. 5-8

MAINE.

Androscoggin	Lewiston	Sept. 11-14
Aroostook	Houlton	Sept. 27-28
Cumberland	Gorham	Sept. 18-20
Cumberland	Gray Corner	Sept. 18-20
Cumberland	Bridgton	Oct. 10-15
Kennebec	Waterville	Sept. 18-19
Kennebec	Readfield	Sept. 25-27
Knox	Rockland	Sept. 18-21
Lincoln	Damariscotta	Sept. 25-28
Oxford	South Paris	Oct. 2-4
Penobscot	Bangor	Aug. 28-31
Penobscot	Exeter	Sept. 25-27
Penobscot	Lee	Oct. 4-5
Sagadahoc	Topsham	Oct. 9-11
Somerset	Skowhegan	Sept. 18-20
Washington	Machias	Sept. 19-20
York	Saco	Sept. 25-28

MARYLAND.

Cecil	Elkton	Oct. 2-5
Frederick	Frederick	Oct. 9-12
Harford	Bel Air	Oct. 9-12
Talbot	Easton	Oct. 18-21

MASSACHUSETTS.

Barnstable	Barnstable	Sept. 25-26
Berkshire	Gt. Barrington	Sept. 26-28
Berkshire	North Adams	Sept. 18-20
Bristol	Taunton	Sept. 25-27
Dukes	West Tisbury	Oct. 2-4
Essex	Peabody	Sept. 25-26
Franklin	Charlemont	Sept. 13-14
Franklin	Greenfield	Sept. 27-28
Hampden	Palmer	Sept. 11-12
Hampshire	Northampton	Oct. 3-4
Middlesex	Concord	Sept. 25-26
No. Middlesex	Lowell	Sept. 19-20
Plymouth	Hingham	Sept. 25-26
Plymouth	Marshfield	Sept. 12-14
Suffolk	Boston	Sept. 18-21

Worcester	Athol	Sept. 18-19
Worcester	Barre	Sept. 27-28
Worcester	Fitchburg	Sept. 25-26
Worcester	Sturbridge	Sept. 13-14
Worcester	Uxbridge	Sept. 25-26
Worcester	Worcester	Sept. 4-7

MICHIGAN.

Allegan	Plainwell	Sept. 23-29
Allegan	Allegan	Oct. 2-5
Antrim	Bellaire	Sept. 24-26
Barry	Hastings	Sept. 25-28
Bay	Bay City	Sept. 25-27
Berrien	Niles	Sept. 18-21
Branch	Coldwater	Sept. 24-28
Calhoun	Marshall	Oct. 2-5
Clinton	St. John's	Oct. 2-5
Clinton	Ovid	Oct. 9-12
Eaton	Charlotte	Oct. 4-7
Eaton	Eaton Rapids	Oct. 2-4
Genesee	Flint	Sept. 17-21
Genesee	Fentonville	Oct. 2-5
Grand Traverse	Traverse City	Sep. 18-20
Gratiot	Ithaca	Sept. 25-28
Ingham	Stockbridge	Oct. 2-4
Ionia	Hubbardston	Sept. 18-21
Ionia	Ionia	Sept. 25-28
Kent	Grand Rapids	Sep. 17-21
Lapeer	Lapeer	Sept. 24-27
Lapeer	Hadley	Oct. 2-4
Lenawee	Adrian	Sept. 25-28
Macomb	Armada	Oct. 3-5
Macomb	Romeo	Oct. 9-12
Midland	Midland	Sept. 4-6
Monroe	Petersburgh	Oct. 2-5
Montcalm	Greenville	Oct. 2-5
Oakland	Milford	Oct. 9-11
Oakland	Pontiac	Sept. 25-28
Oakland	Rochester	Oct. 2-5
Oceana	Hart	Sept. 11-14
Ogemaw	West Branch	Sept. 25-27
Osceola	Evart	Sept. 26-28
Ottawa	Berlin	Sept. 25-28
St. Joseph	Centreville	Sept. 18-21
Tuscola	Vassar	Sept. 25-28
Washtenaw	Ypsilanti	Sept. 18-21

MINNESOTA.

Anoka	Anoka	Sept. 15-17
Blue Earth	Garden City	Sept. 5-7
Clay	Glyndon	Oct. 2-4
Dakota	Farmington	Sept. 26-28
Faribault	WinnebagoCity	Sep. 26-28
Hubbard	Park Rapids	Sept. 12-13
McLeod	Hutchinson	Sept. 18-21
Mower	Austin	Sept. 4-6
Nicollet	St. Peter	Sept. 20-22
Olmstead	Rochester	Sept. 3-8
Ramsey	Hamline	Sept. 10-15
Scott	Shakopee	Oct. 1-3
Stearns	St. Cloud	Sept. 18-22

MISSISSIPPI.

Lincoln	Brookhaven	Oct. 16

MISSOURI.

Atchison	Tarkio	Aug. 28-31
Audrain	Mexico	Aug. 7-11
Buchanan	St. Joseph	Sept. 10-15
Callaway	Fulton	Aug. 14-18
Cass	Belton	Aug. 28-31
Chariton	Keytesville	Oct. 2-6
Dallas	Buffalo	Sept. 12-15
Franklin	Washington	Sept. 6-8
Greene	Springfield	Sept. 3-8
Henry	Clinton	Sept. 5-8
Jackson	Kansas City	Sept. 17-22
Jasper	Sarcoxie	Oct. 2-6
Johnson	Holden	Aug. 21-24
Lafayette	Higginsville	Aug. 21
Lawrence	Mt. Vernon	Sept. 25-28
Lewis	La Grange	Aug. 29-31
Linn	Brookfield	Sept. 26-29
Marion	Palmyra	Oct. 9-13
Marion	Hannibal	Aug. 14-18
Moniteau	California	Sept. 18-21
Monroe	Paris	Aug. 28-31
Montgomery	Montgomery City	Aug. 28-Sept. 1
Nodaway	Maryville	Aug. 20-25
Pettis	Sedalia	Aug. 14-18
Platte	Platte City	Aug. 28-Sep. 1
Putnam	Unionville	Sept. 12-15
Saline	Marshall	July 31-Aug. 4
Scotland	Memphis	July 25-26
Shelby	Shelbina	Sept. 4-7
St. Charles	St. Charles	Sept. 11-13
St. Francois	Farmingham	Sept. 18-21
Sullivan	Milan	Sept. 5-8

MISSOURI DISTRICT.

Boone	Columbia	Aug. 21-25
Caldwell	Hamilton	Aug. 27-30
Grundy	Trenton	Sept. 11-14
Harrison	Ridgeway	Aug. 30-Sept. 1
Holt	Maitland	Aug. 27-31
Lewis	Williamstown	Aug. 20-25
Moniteau	Tipton	Aug. 29-Sept. 1
Ray	Lawson	Aug. 21-24

NEBRASKA.

Adams	Hastings	Sept. 4-7
Antelope	Neligh	Sept. 12-14
Brown	Long Pine	Sept. 25-28
Buffalo	Kearney	Sept. 18-21
Clay	Clay Center	Sept. 25-28
Cedar	Hartington	Sept. 18-20
Colfax	Schuyler	Sept. 19-21
Custer	Broken Bow	Sept. 21-24
Dawson	Plum Creek	Sept. 25-28
Dixon	Ponca	Sept. 11-14
Dodge	Fremont	Oct. 2-5
Fillmore	Geneva	Sept. 25-28
Franklin	Franklin	Sept. 20-22
Furnas	Beaver City	Sept. 18-20
Gage	Beatrice	Sept. 4-7
Gage	Blue Springs	Sept. 18-21
Greeley	Greeley Centre	Sept. 4-6
Hall	Grand Island	Sept. 18-21
Hamilton	Aurora	Sept. 18-21
Hitchcock	Culbertson	Sept. 26-28
Jefferson	Fairbury	Sept. 25-28
Johnson	Tecumseh	Sept. 18-21
Kearney	Minden	Sept. 4-7
Knox	Creighton	Sept. 18-21
Lancaster	Lincoln	Sept. 7-14
Nance	Fullerton	Oct. 3-5
Nemaha	Auburn	Oct. 2-5
Nuckolls	Nelson	Sept. 20-22
Platte	Columbus	Sept. 26-28
Polk	Osceola	Sept. 3-6
Richardson	Salem	Sept. 18-21
Sarpy	Papillion	Sept. 17-20
Seward	Seward	Sept. 26-29
Thayer	Hebron	Sept. 3-6
Valley	Ord	Oct. 2-4
Wayne	Wayne	Sept. 26-28
Webster	Red Cloud	Sept. 25-28
York	York	Sept. 18-21

NEBRASKA DISTRICT.

Dixon	Wakefield	Sept. 18-20
Douglas	Omaha	Sept. 3-8
Fillmore	Fairmont	Aug. 28-31
Richardson	Falls City	Sept. 25-29

NEW HAMPSHIRE.

Belknap	Laconia	Sept. 4-7

NEW JERSEY.

Atlantic	Egg HarborC'y.	Sep. 24-26
Burlington	Mt. Holly	Oct. 8-12
Cumberland	Bridgeton	Sept. 5-6
Hunterdon	Flemington	Sept. 25-28
Monmouth	Freehold	Sept. 25-27
Salem	Woodstown	Sept. 11-13
Sussex	Newton	Oct. 2-5

NEW YORK.

Allegany	Angelica	Sept. 25-27
Allegany	Cuba	Sept. 11-14
Broome	Whitney's Point	Sept. 4-7
Chautauqua	Jamestown	Sept. 3-6
Chenango	Norwich	Sept. 4-7
Clinton	Plattsburgh	Sept. 18-21
Delaware	Deposit	Sept. 18-20
Erie	Hamburgh	Sept. 18-21
Fulton	Johnstown	Sept. 3-6
Genesee	Batavia	Sept. 25-27
Jefferson	Carthage	Sept. 4-6
Lewis	Lowville	Sept. 18-21
Livingston	Geneseo	Oct. 3-4
Monroe	Rochester	Sept. 25-28
Montgomery	Fonda	Sept. 4-7
Ontario	Canandaigua	Sept. 25-27
Orange	Goshen	Sept. 18-21
Orleans	Albion	Sept. 20-22
Oswego	Oswego	Sept. 11-14
Otsego	Cooperstown	Sept. 17-19
Queens	Mineola	Sept. 25-28
Rockland	Spring Valley	Sept. 11-14
Schoharie	Schoharie	Sept. 17-19
Seneca	Waterloo	Sept. 25-27
St. Lawrence	Canton	Sept. 11-13
Steuben	Hornellsv'le	Aug. 27-S'r. 1
Steuben	Prattsburgh	Sept. 11-13
Steuben	Bath	Sept. 25-28
Suffolk	Riverhead	Oct. 2-4
Sullivan	Monticello	Sept. 4-6
Tioga	Owego	Sept. 11-13
Tompkins	Dryden	Sept. 26-28
Tompkins	Ithaca	Sept. 4-7
Ulster	Ellenville	Sept. 25-27
Washington	Fort Edward	Sept. 18-21
Wayne	Clyde	Sept. 27-29
Wayne	Lyons	Oct. 4-6
Westchester	White Plains	Sept. 24-29
Wyoming	Warsaw	Oct. 3-4
Wyoming	Perry	Sept. 27-28
Yates	Penn Yan	Sept. 18-20

OHIO.

Adams	Winchester	Sept. 11-14
Allen	Lima	Sept. 4-7
Ashtabula	Jefferson	Sept. 25-28
Athens	Athens	Aug. 29-31
Auglaize	Wapakoneta	Oct. 2 5
Belmont	St. Clairsville	Sept. 5-7
Brown	Georgetown	Oct. 2-5
Carroll	Carrollton	Oct. 2-5
Champaign	Urbana	Aug. 28-31
Clarke	Springfield	Aug. 20-24
Clermont	New Boston	Sept. 4-7
Clinton	Sabina	Aug. 20-24
Clinton	Wilmington	July 31-A. 3
Columbiana	New Lisbon	Sept. 25-27
Coshocton	Coshocton	Oct. 10-12
Crawford	Bucyrus	Sept. 25-28
Cuyahoga	Chagrin Falls	Sept. 11-14
Darke	Greenville	Sept. 17-21
Defiance	Defiance	Aug. 27-Sept. 1
Delaware	Delaware	Aug. 28-31
Erie	Sandusky	Sept. 18-21
Fairfield	Lancaster	Oct. 9-13
Fayette	Washington C.H.	A. 28-31
Fulton	Wauseon	Sept. 4-7
Gallia	Gallipolis	Aug 30-Sep. 1
Geauga	Burton	Sept. 18-21
Greene	Jamestown	Aug. 14-17
Hancock	Findlay	Sept. 12-15
Hamilton	Carthage	Aug. 21-24
Hardin	Ada	Sept. 18-21
Hardin	Kenton	Sept. 4-7
Harrison	Cadiz	Oct. 2-5
Harrison	Smyrna	Sept. 11-13
Henry	Napoleon	Sept. 10-14
Highland	Greenfield	J'y 31-Aug. 3
Highland	Hillsboro	Aug. 7-10
Hocking	Logan	Oct. 3-6
Holmes	Millersburg	Sept. 25-28
Huron	Norwalk	Sept. 11-14
Jefferson	Smithfield	Sept. 26-28
Knox	Mt. Vernon	Aug. 28-31
Lake	Painesville	Sept. 10-13
Licking	Newark	Oct. 2-6
Licking	Pataskala	Aug. 28-31
Logan	Bellefontaine	Oct. 2-5
Lorain	Elyria	Sept. 4-7
Lorain	Wellington	Aug. 28-31
Mahoning	Canfield	Oct. 2-4
Mahoning	Youngstown	Sept. 18-21
Marion	Marion	Sept. 25-28
Medina	Medina	Sept. 4-6
Meigs	Pomeroy	Sept. 5-7
Mercer	Celina	Sept. 25-28
Miami	Troy	Oct. 1-5
Monroe	Woodsfield	Sept. 11-13
Montgomery	Dayton	Sept. 17-21
Morgan	McConnelsville	Oct. 9-12
Morrow	Mt. Gilead	Oct. 2-5
Muskingum	Zanesville	Aug. 28-31
Noble	Sarahsville	Sept. 5-7
Ottawa	Port Clinton	Sept. 26-28
Paulding	Paulding	Sept. 11-14
Perry	New Lexington	S. 26-28
Perry	Somerset	Oct. 16-18
Pickaway	Circleville	Oct. 2-5
Portage	Ravenna	Sept. 26-28
Preble	Eaton	Sept. 24-28
Putnam	Ottawa	Oct. 2-6
Richland	Mansfield	Aug. 28-31
Richland	Plymouth	Oct. 2-5
Sandusky	Clyde	Sept. 25-28
Sandusky	Fremont	Oct. 2-5
Seneca	Fostoria	Aug. 21-25
Seneca	Tiffin	Sept. 11-14
Shelby	Sidney	Sept. 25-28
Stark	Canton	Sept. 24-28
Summit	Akron	Oct. 2-5
Trumbull	Hartford	Sept. 4-7
Trumbull	Warren	Sept. 6-8
Tuscarawas	Canal Dover	Oct. 2-5
Union	Marysville	Oct. 2-5
Van Wert	Van Wert	Sept. 4-7
Vinton	McArthur	Aug. 8-10
Warren	Lebanon	Sept. 28-31
Washington	Marietta	Sept. 12-14
Wayne	Wooster	Oct. 2-5
Wayne	Orrville	Oct. 9-12
Wood	Bowling Green	Oct. 2-6
Wood	Tontogany	Sept. 25-29
Wyandot	Upper Sandusky	Oct. 2-5

OHIO DISTRICT.

Belmont	Barnesville	Oct. 9-11
Clinton	Martinsville	Sept. 4-7
Defiance	Hicksville	Sept. 18-21
Greene	Jamestown	Aug. 14-17
Licking	Pataskala	Aug. 28-31
Lucas	Toledo	Aug. 27-31
Montgomery	Dayton	Sept. 17-21
Portage	Deerfield	Sept. 27-29
Richland	Shelby	Sept. 18-21
Scioto	Portsmouth	Aug. 7-10
Stark	Marlboro	Oct. 4-6

PENNSYLVANIA.

Armstrong	Parker	Sept. 18-21
Armstrong	Dayton	Sept. 25-28
Beaver	Beaver	Sept. 25-28
Bedford	Bedford	Sept. 18-21
Berks	Reading	Sept. 4-7
Berks	Kutztown	Oct. 3-6
Blair	Hollidaysburg	Sep. 11-14
Bradford	Troy	Sept. 11-14
Bradford	Towanda	Sept. 25-27
Bucks	Doylestown	Oct. 2-5
Butler	Butler	Sept. 11-14
Butler	Millerstown	Sept. 4-7
Carbon	Lehighton	Oct. 2-5
Clarion	Clarion	Sept. 25-28
Chester	Oxford	26-28
Columbia	Berwick	Sept. 12-15
Columbia	Bloomsburg	Oct. 10-13
Crawford	Cambridge	Sept. 5-7
Crawford	Cochranton	Sept. 12-14
Crawford	Conneautville	Sept. 26-28
Crawford	Titusville	Sept. 18-21
Cumberland	Carlisle	Sept. 25-28
Erie	Erie	Sept. 18-21
Erie	Wattsburg	Sept. 25-27
Fayette	Uniontown	Oct. 2-5
Greene	Carmichael's	Sept. 25-27
Green	Waynesburg	Sept. 11-13
Indiana	Indiana	Oct. 2-5
Jefferson	Brookville	Sept. 11-14
Jefferson	Punxsutawney	Sept. 18-21
Juniata	Port Royal	Sept. 25-28
Lackawanna	Scranton	Sept. 18-21
Lancaster	Lancaster	Sept. 17-21
Lehigh	Allentown	Sept. 24-28
Luzerne	Dallas	Oct. 2-5
McKean	Port Allegany	Sep. 13-15
Mercer	Mercer	Sept. 10-12
Mercer	Stoneboro	Sept. 25-27
Montour	Danville	Sept. 16-19
Montour	Washingtonv'e	Oct. 12-15
Montgomery	Pottstown	Sept. 25-28
Northampton	Easton	Sept. 11-15
Northampton	Nazareth	Oct. 2-5
Perry	Newport	Sept. 18-21
Schuylkill	Orwigsburg	Oct. 2-5
Schuylkill	Ringtown	Sept. 12-14
Sullivan	Forksville	Oct. 3-5
Susquehanna	Montrose	Sept. 12-13
Susquehanna	Hartford	Sept. 26-27
Tioga	Wellsboro	Sept. 11-14
Tioga	Mansfield	Sept. 25-28
Union	Lewisburg	Sept. 4-7
Venango	Franklin	Sept. 4-7
Warren	Warren	Sept. 18-21
Washington	Burgettstown	Oct. 2-4
Washington	Washington	Sept. 4-7
Westmoreland	Greensburg	Sept. 18-21
Wyoming	Tunkhannock	Sep. 12-14
York	Hanover	Sept. 18-21
York	York	Oct. 2-5

RHODE ISLAND.

Providence	Narragansett P'k.	S. 24-28
Washington	W. Kingston	Sept. 18-20
Washington	Westerly	Sept. 18-20

SOUTH CAROLINA.

Marion	Marion	Nov. 7-9

TENNESSEE.

Bedford	Shelbyville	Sept. 6-8
DeKalb	Alexandria	Sept. 20-22
Gibson	Trenton	Oct. 9
Rutherford	Murfreesboro	Sept. 11-15
Wilson	Lebanon	Sept. 6-8

VERMONT.

Caledonia	St. Johnsbury	Sept. 18-20
Franklin	St. Albans	Aug. 29-31
Lamoille	Morristown	Sept. 25-27
Rutland	Rutland	Sept. 18-20

VIRGINIA.

Accomack	Keller	Aug. 21-25
Albemarle	Scottsville	Sept. 19-21
Augusta	Staunton	Sept. 25-28
Fairfax	Grange Camp	Sept. 11-18
Frederick	Winchester	Oct. 9-12
Loudoun	Leesburg	Sept. 11-13

WASHINGTON TERRITORY.

Walla Walla	Walla Walla	Oct. 1-6

WEST VIRGINIA.

Harrison	Clarksburg	Sept. 11-14
Jackson	Ravenswood	Sept. 18-21
Mason	Point Pleasant	Sept. 11-14
Monroe	Alderson	Sept. 11-14
Ritchie	Pennsboro	Sept. 18-20
Tyler	Middlebourne	Sept. 5-7

WISCONSIN.

Brown	De Pere	Sept. 4-7
Chippewa	Chippewa Falls	Sept. 4-7
Dane	Madison	Oct. 1-6
Dunn	Menomonee	Sept. 12-14
Fond du Lac	Fond du Lac	Sept. 11-14
Grant	Boscobel	Sept. 11-14
Grant	Lancaster	Sept. 19-21
Green	Monroe	Sept. 12-15
Jefferson	Watertown	Sept. 24-28
Kewaunee	Kawaunee	Sept. 24-26
La Crosse	West Salem	Sept. 4-7
Marathon	Wausau	Sept. 17-19
Monroe	Sparta	Sept. 11-13
Outagamie	Hortonville	Sept. 26-28
Ozaukee	Saukville	Sept. 26-27
Pierce	Ellsworth	Sept. 26-28
Portage	Amherst	Sept. 25-27
Racine	Racine	Sept. 4-7
Rock	Janesville	Sept. 11-14
Sauk	Baraboo	Sept. 11-14
Sheboygan	Sheboygan Falls	Se. 18-21
Vernon	Viroqua	Sept. 26-28
Walworth	Elkhorn	Sept. 25-28
Waukesha	Waukesha	Aug. 28-31

CANADA.

Carleton	Ottawa	Sept. 24-29
Elgin	Wallacetown	Oct. 2-3
Elgin	Rodney	Oct. 13
Frontenac	Kingston	Sept. 10-15
Glengary	Williamstown	Sept. 26-27
Grey	Durham	Sept. 25-26
Hamilton	Hamilton	Sept. 24-28
Hastings	Belleville	Sept. 25-28
Kent	Chatham	Oct. 2-5
Lincoln	St. Catharines	Sept. 24-26
London	London	Sept. 20-29
Middlesex	Strathroy	Oct. 2-3
Norfolk	Simcoe	Oct. 16-17
Ontario	Port Perry	Sept. 25-28
Ottawa	Ottawa	Sept. 24-29
Peterboro	Peterboro	Sept. 25-27
Prince Edward	Pictou	Oct. 2-3
Queen	Charlottetown	Oct. 3-4
Sherbrooke	Sherbrooke	Sept. 4-6
Simcoe	Cookstown	Oct. 9-10
Simcoe	Collingwood	Sept. 25-28
Toronto	Toronto	Sept. 10-22
Victoria	Lindsay	Oct. 2-4
Waterloo	Berlin	Sept. 27-28
Wellington	Elora	Oct. 4-5
Wellington	Guelph	Sept. 12-14

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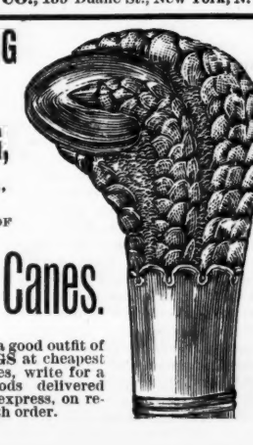

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A "Bare-Faced" Fraud.

C. J. Donnelly, Faulk Co., Dakota, sends us a circular of a so-called "Hair Grower" and asks if the article has any value. According to the circular "it is warranted to grow a heavy beard and moustache on the smoothest face." "Twenty to sixty days are required to bring out the desired result, according to temperament, age, etc." This is illustrated by "the engravings on the opposite page," of the circular. One of them shows a youth of the vealy age of sixteen, with the smooth fair countenance such a boy ought to have. The other shows him "after using," with a fierce moustache sweeping far below his chin. It is scarcely necessary to characterize this attempt to play upon the credulity of the young, further than to say that it is a self-evident fraud.

An English Farmer Duped.

A "sturdy British yeoman" who came to this country last winter, has taken a costly lesson in the crooked ways of New York sharpers. His name is Thomas Fenelon, and on his arrival in the American metropolis he went to a down-town hotel, where he tarried for a while. He made the acquaintance of one John McDonnell, who proceeded to initiate him into the ways of New York life. Fenelon had a bank draft which he desired to deposit to his own credit. His newly-found friend introduced him to the Bowery National Bank and negotiated the draft. Mr. Fenelon generously presented him with fifty dollars for the service. But when he afterwards went to the bank to draw some of the money he learned that McDonnell had never deposited the draft at all, but had drawn the full amount and made off with it. The total amount of the swindle was seven hundred and thirty-two dollars. Nothing more was known of the swindler until recently, when he was arrested and held for trial. If farmers, English or other, with money in their possession, tarry in New York City, they cannot be too careful about the acquaintances they pick up.

Wheat at Ten Dollars a Bushel.

The "Bohemian oats swindle" has turned up in Western Maryland, with novel variations. Last spring two plausible fellows called upon Benjamin Ahalt, a farmer living near Broad Run, with samples of Bohemian oats and "Seneca Chief" wheat. He bought ten bushels of the latter at ten dollars a bushel, giving his note for one hundred dollars, upon the agreement that the same agents were to call after harvest and take twenty bushels of the wheat at seven and a half dollars per bushel. But the enterprising agents were not content with selling a few bushels of seed wheat at ten times its value, and so in a few weeks they returned to finish plucking their bird. They represented to him that in order to secure their commission they must complete the transaction by purchasing the twenty bushels of wheat at the stipulated price. So they gave him a note for a hundred and fifty dollars, bearing the name of a well-known and responsible resident of the county. But "as a matter of form and a guarantee of good faith," Mr. Ahalt must give them his note for fifty dollars, to be surrendered when he delivered the wheat. The fellows then took their leave, and the farmer, upon presenting his one hundred and fifty dollar note at the bank where it was payable, learned that the signature was forged and the paper was worthless. At last accounts he was trying to find out what had become of his own note for fifty dollars, and if possible stop payment on it.

Bogus Cattle Buyers.

These rascals confine themselves to sparsely settled regions, in which the news of their dealings travels but slowly, so that the chances of being caught are quite small. They usually operate as follows: A man, in dress and general appearance like a drover or cattle buyer, appears in the neighborhood, looks over the cattle on one or more farms, "dickers" a while as to the price, and finally agrees to take the lot at a certain sum, generally a slight advance on the current price. He may be in no hurry, and perhaps is entertained by the farmer for a day or two. When he comes to settle for the cattle, he may pay a small portion in cash, and then offer a draft on some Chicago or New York bank for a good deal more than the balance. The farmer gives the drover money for the extra amount of the draft. Of course the draft proves to be worthless. The rascal is always careful to see that the cash balance thus obtained is far more than the small proportion of cash he first paid down. In some cases the drover gives no money, but only the draft in excess of the bill, so that the whole balance paid him by the farmer will be clear gain. In one instance he bought a lot of young cattle and sheep amounting to $214.50, paid $25 in cash, and "having no other change and not having time to go to town to get the bank to cash it," tendered a draft on the Maverick National Bank of Boston for $275. This, of course, was $60.50 too much, so the farmer paid him that amount in cash. The drover said he would come the next day for the stock, and went off. The farmer waited several days, went to the bank, and then, by inquiry of the Maverick bank, found the draft to be bogus. He was thus cheated out of $60.50. In one or two cases the humbugs have gone still further, and, after concluding the trade, borrowed the farmer's horse and buggy for "an hour or two" and driven off. That was the last seen of them. The horse was recovered in a jaded condition, miles away, after much difficulty.

This is a species of fraud that farmers should be specially warned against. All farmers are naturally anxious to secure a good price for what stock they have to sell, and an offer a little above the local market, especially if part of the purchase money is paid on the spot to "bind the bargain," is very likely to be taken up. Nor, if the scheme is well worked, is the farmer likely to have his suspicions aroused by the tender of an apparently good cashier's draft, even though he has to pay back in "change" a number of dollars more than the first payment received. This same idea is applied with equal ease to the purchase of other farm products. To be sure, such operations are a very serious crime, but so far no arrests have been effected. The farmer's safeguard is to accept only cash from all strangers who wish to buy of him. If the stranger offers a check or draft in whole or part payment, let the farmer, like all careful business men, insist upon evidence that the draft or check is good. Ask the cashier of your nearest bank to inquire by telegraph of the bank on which the drover's check is made if he has a balance there to pay it. This will only cost twenty-five cents to a dollar or so and is the most certain way. Or tell the stranger you will take his paper if he will have it indorsed by some of the well-known solid men in neighboring towns to whom he may glibly refer. If you can't get absolute evidence that the paper is worth its face value, don't take it. If the would-be buyer is a reputable and reliable dealer, he can readily furnish such evidence. If he can't furnish it, you don't want anything to do with him, whatever price he may offer.

Hunting for a Fortune.

This old game is brought up again by one "Henry A. Allen, counsellor-at-law, Postoffice Box 2,888, Boston, Mass," who has been sending out to people by the name of Allen the following vaguely-worded type-written letter:

Dear Sir: A proposal of settlement has been made in the case of the Allen heirs. This suit was to recover a property left to John Allen. It is important that before making any settlement we receive the names of all the parties in interest in order to avoid any complications. There will be no liabilities incurred by entering a claim, as the expenses and my fee are to be met by the property recovered, and were entirely contingent upon the money being recovered. There has been a genealogical list prepared by which you can easily trace any connection of your branch of the family with that of John Allen's descendants. If you are in doubt as to whether you are entitled to any share in this property, for the sum of one dollar we will send you a copy of the list in question. It is important that we receive a prompt reply, if you are one of the heirs, as after the distribution is made it will be too late to consider any individual claim if proper attempts have been made to find the heirs. Very truly yours,

H. A. ALLEN.

This is a remarkably enticing document, and many persons will be inveigled by it into sending a dollar bill to this "H. A. Allen." If he sends them the list of names referred to in return for their money, as was the plan of the old "British-American Claim Agency," no legal or technical crime will be committed. One subscriber complains that he sent a dollar, but has not received the list, and although he wrote "H. A. Allen," complaining that the list failed to come, he has received no reply. If this is the way the scheme is worked, it is nothing less than a cold-blooded swindle. Another subscriber sent his dollar, waited awhile and then wrote a very threatening letter, which was effectual in securing the return of his money in a note from "H. A. Allen, by clerk," that read:

Mr. Allen is in England, having been called there soon after writing to certain members of the Allen family. He left directions to notify all senders of remittances that orders could not be filled until his return, and to return their fees. Nothing of importance will be done until he gets back in September.

This doesn't coincide with the urgent advice given in the first letter, to remit promptly. Is it because the second letter is written only to those who show fight? The fact that H. A. Allen's name does not appear on the list of Boston lawyers or among the members of the Suffolk County bar, together with the hazy nature of his letter, should be enough to put every reader of the AMERICAN AGRICULTURIST on his guard.

Exposing Frauds.

Undoubtedly the AMERICAN AGRICULTURIST has saved the farmers of the country, by its fearless exposure of "Sundry Humbugs," many times the total sum they have paid in subscriptions to this magazine. No small share of the credit for this great work, however, is due to our readers, who have so earnestly co-operated with us in showing up the tricks of quacks and frauds. It is often impossible to get any track of these fellows unless the parties whom they victimize or tempt promptly inform the AMERICAN AGRICULTURIST. We esteem it a favor and a token of confidence to receive from any of our vast constituency, information of any sort relating to men or humbugs who seek to defraud the public. Any fraudulent or misleading letters, circulars, statements, advertisements, offers, propositions, etc., received by readers of the AMERICAN AGRICULTURIST, should be at once forwarded to the Editor. Experience with or further details about such humbugs should accompany the papers. Always sign your full name and post-office address, so that if we wish further information we may be able to write for it. Of course the strictest confidence will be maintained with those who may not wish their names to appear as complainants. It is necessary that our thousands of subscribers should freely assist us in this manner, if the secret ways of many Humbugs are to be exposed to the light of truth.

Insults on Envelopes.

Debt-collecting agencies which confine their work to legitimate means of collecting honest dues from dishonest men and deadbeats may be encouraged, but some Western debt-collecting schemes are out-and-out frauds. They are run by unprincipled men, who send (in envelopes with "BAD DEBTS COLLECTED" printed on them in big type) threatening demands to country people for small bills which the agency claims are put in its hands for collection. Occasionally there is some foundation for the bill, but often the charge is wholly fictitious and fraudulent. People who are easily scared, or who are sensitive about such matters, are not infrequently pestered into paying these sharpers the amount called for. The sum is never large, and many prefer to pay it rather than have any bother. This contemptible and criminal proceeding can be suppressed under the new postal law which went into effect June 21. The law prohibits "any indecent, lewd, lascivious, obscene, libelous, scurrilous or threatening delineations, epithets, terms or language reflecting injuriously upon the character or credit of another, on the envelope or outside wrapper." The fine for each violation of this law is not less than $100 and imprisonment for one year. Postmasters may determine whether anything appearing on the outside of an envelope, wrapper or card, is contrary to the law, and are authorized to restrain any such apparently unlawful mail matter from going through the mails. Our readers can assist postmasters in enforcing this law by calling their attention to violations of it. Mr. Vest of Missouri introduced a bill into the United States Senate, July 10, to effectually prevent evasions of the above law, which a couple of Chicago and Kansas City agencies have ingeniously got around by printing their "Bad Debt" sign on the *inside* of transparent envelopes. The bill will pass.

The Topolobampo Colony.

This Utopian scheme of a certain band of Communistic theorists is again brought to public attention by the return of several refugees from the new colony. In September, 1886, a charter of incorporation was taken out in Colorado, under the title of "The Credit Foncier Co.," with one Owen as its principal spirit. He secured some sort of a concession from the Mexican government and obtained some land on Topolobampo Bay in Sinaloa, midway between the River Fuerte and Sinaloa, on the west coast of Mexico. This place was claimed to have the best deep water harbor of the Western coast, and the most extravagant claims were published as to the commercial, agricultural and mineral resources of the country. Some 250 enthusiasts were induced to set out for the promised land in the spring of 1887. The colonists found a region rich in cactus and sand, but lacking all the attractive features which had been so glowingly described in the company's circulars. The only wooden structure was Owen's castle, "Alberton Hall," worth here about $200, but costing nearly $4,000 there, which was paid for out of the common treasury. An engraving of the place, from one of the company's publications, shows this "hall" at the end of the town; while a central rectangular affair made of stone and mud sheltered five families, all the rest of the colonists living in tents. The alleged co-operative system of government appears to have wholly "petered out," robbery of the mails was complained of, small-pox appeared, the rough element predominated, the food supply was meager and of bad quality, agriculture was impossible except by the expenditure of large sums for irrigation, and with starvation staring them in the face, a large party of the colonists returned after almost incredible hardships to Guaymas and thence dispersed to their former homes in various States. They describe the climate as unhealthy in the extreme, the heat in winter being over 100 degrees, the fleas intolerable, and the only decent drinking water six miles distant. Cactus is the principal crop. Governor Canedo of Sinaloa visited the remnants of the colony in June of this year. "Those at La Logia, on the left bank of the Fuerte River, work hard, but do not raise enough for their consumption. They lodge in ragged tents, which are insufficient to protect them against the ardent heat of the sun in the summer season, and were it not for receiving regular supplies of provisions from California the colony could not exist. The colonists are wretchedly clothed, and their domestic surroundings, furniture, utensils, etc., are of the scantiest. At Topolobampo Bay there remain but fourteen colonists, of whom one-half devote themselves to fishing at the Island of Santa Maria." These are reported as still having faith in Owen, but the majority who have come back denounce him and the whole enterprise in unmeasured terms.

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Holstein-Friesian Cattle.

An authoritative article in HARPER'S MAGAZINE for August — HOLSTEIN-FRIESIAN CATTLE, by Mr. S. Hoxie, the specialist in this field, with illustrations, "A Group of the Aaggie Family," full page; "A Group of the Clothilde Family," full page; and the "Holstein Bull 'Netherland Prince.'"

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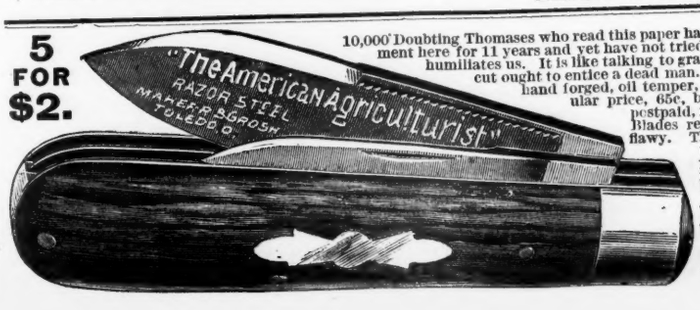

10,000 Doubting Thomases who read this paper have seen our advertisement here for 11 years and yet have not tried one of our knives. It humiliates us. It is like talking to graven images. Now this cut ought to entice a dead man. It is exact size of our hand forged, oil temper, file tested knife. Regular price, 65c, but we send you one, postpaid, for 50c now; 5 for $2. Blades replaced free if soft or flawy. That's all we shall say this month. What do **you** say? 64-page list free. Also "How to Use a Razor."

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Toledo, Ohio.

Poultry in Summer.

It seems very hard to keep poultry shut up during hot weather, and so it often is. But by taking the needed care, their lot may be made very comfortable, and the trouble be amply repaid in eggs. The heavy fowls, the Asiatics, need only a low inclosure, but the constant layers, such as the Leghorns, need a high fence. The present styles of wire netting allow one to build an effective inclosure at a moderate outlay. If the fowls find their wants provided for within the yard, they will have less tendency to roam than if comfort was lacking. When fowls roam abroad, green vegetable food and fresh insects are found in abundance. If there is, as there should be on every farm, a garden of good size, the wastes from the vegetables as well as the weeds should be thrown to the fowls.

Another method to supply them with vegetable food and insects also is to measure off two ample beds within the yard, and break them up with the spade or plow. Make a frame of the size of the bed, cover it with wire netting, and provide sides about six inches high. These sides may be boards of the proper width, and held up by strong stakes to which the boards may be nailed, or by using two stakes, one on each side of the board. Spade up one of the beds, allowing the birds to pick up the worms and insects (for you can't well prevent this). Sow it thickly to rye, pack down or roll the surface, and put on the frame. If after the rye starts the birds manage to get at the plants, make the sides of the frame higher. When the rye reaches the net work, spade up and sow the other bed in the same manner, allowing the fowls to eat off the grain shoots as they come up through the wire. When the rye of the second bed comes up through the netting, take the wire from the first frame, and let the fowls have free access to it, to eat what they will, and scratch for what they may find. In two or three days spade up bed number one, turning under the roots and whatever of the stalks the fowls have left on it, and they also should have left a liberal manuring. Sow anew and treat as before, alternating the beds until it becomes too late to sow. The last sowing should leave a good crop upon the ground, from which the birds shall be kept during the winter by the use of the frames. The green rye will start very early and be very welcome to the fowls, which should be allowed to forage upon one of the beds, while the other crop is growing to be fed through the frame, and the same rotation continued. The rye may sometimes be alternated with oats, mustard or whatever other crops may be preferred, but a winter grain should be sown at the last sowing.

Ground bone may be applied to the beds as a fertilizer, and when the hens have their way with the beds they will pick up a lot of egg-making material, but this should not be the only food of the kind furnished. Ground oyster or clam shells, and ground bones, which can usually be bought in cities, should be given freely. At a distance from such markets look to home resources. Bones from the kitchen should be saved and brought into available shape by grinding or pounding. Look to the restaurants and saloons, which in far inland villages have "shell oysters" in cold weather, and engage their shells beforehand. In some lakes and shallow rivers, fresh water clams or muscles, as they are called, are very abundant, often so plenty that they may be raked out; the shells of these are mostly so thin that they do not need to be ground. If placed in a strong box they may be crushed with a pounder sufficiently to allow the fowls to get at the animals within, while they break the shells smaller.

Fowls that are shut up in hot weather need extra attention as to cleanliness—both in the houses and without. Whitewash, use kerosene for lice, remove the manure frequently or cover it with dry earth; do not forget the dust bath, which must be under cover where it may not be a mud bath.

If fowls can roam about at will, many think if they are given their evening feed of grain they have done their whole duty by them, and the creatures are bound to take care of themselves. Some do not even give the nightly food, thinking that they will come home to visit the nest boxes in return for past favors. Water is one of the necessities to fowls, always, and when they are at large the supply often runs short. Runs from the drains that seem abundant, go dry in June, and the poor birds have to travel far to find water, and if found, it is often unfit. See that the birds when at large can always find good water without trespassing upon the domestic supply or that of a neighbor. If they must get this water from a river or a lake, see that they have an easy and safe approach. Water may often be abundant and near at hand, yet on account of steep banks they cannot get at it, and must go without until they go home at night.

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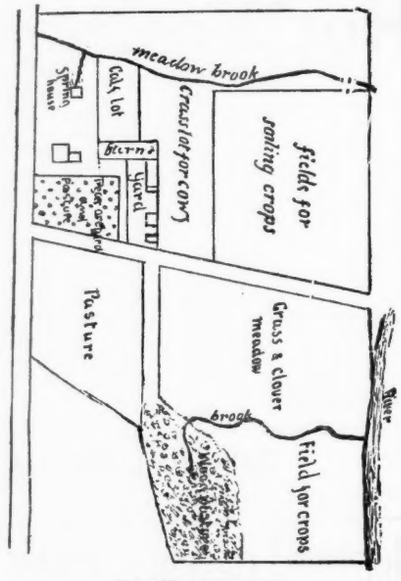

PLAN OF A DAIRY FARM.

OVER ONE HUNDRED ILLUSTRATIONS.

The dairy industry has advanced with greater strides during the last two decades than any other of the great agricultural interests. Formerly it was mainly confined to New England and the Middle States. Now, however, in the prairie States, dairying has become a leading industry, and it is notable that in the more recently settled Territories of the Northwest, the cheese factory or creamery is one of the earliest features in a new settlement. During the period referred to, the entire business of dairying has become almost revolutionized. The extension of the associated system, the invention of new and greatly improved implements and machinery, and new processes, have occasioned these radical changes. The Dairyman's Manual embodies a full knowledge of improved methods, and all that is latest and most valuable in dairy lore. Its author has long occupied an advanced position in the march of dairy improvement, as a practical dairyman, a scientific investigator, and a writer for the press. The book embraces the entire subject, and will prove a trustworthy hand-book to every one who is interested in any department of dairying.

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Monthly Crop Report.

WASHINGTON, July 12.—The Department of Agriculture makes the July general averages of condition as follows: Cotton 86.7, winter wheat 75.6, spring wheat 95.9, corn 93, oats 95.2, barley 81, winter rye 95.1, spring rye 96.8, tobacco, manufacturing leaf, 89.

Cotton is later than usual in every State. There is generally a medium stand. Cultivation has been somewhat retarded by local rains, and a part of the area is in the grass, notably in the district west of the Mississippi. The plant is generally in vigorous condition and growing rapidly. The State averages are: Virginia 81, North Carolina 85, South Carolina 86, Georgia 90, Florida 90, Alabama 92, Mississippi 92, Louisiana 91, Texas 76, Arkansas 90, Tennessee 90.

Winter wheat has been harvested in the South, and yielded below expectation in the Carolinas, Georgia and Alabama. It has improved slightly in Pennsylvania, Ohio, Indiana, and Illinois. A marked improvement is noted in Michigan. Reports from the Pacific Coast are also more favorable. General condition has advanced from 73.3 to 75.6. Averages of principal States: New York 80, Pennsylvania 93, Ohio 60, Michigan 75, Indiana 62, Illinois 68, Missouri 72, Kansas 93, California 83. Spring wheat has improved in a large portion of the breadth seeded, and promises a large yield, except for possible future drawbacks. The general average has advanced from 92.8 to 95.9. State averages: Wisconsin 91, Minnesota 94, Iowa 97, Nebraska 95, Dakota 98.

The area of corn, as reported, has increased over 4 per cent, making the breadth nearly 76,000,000 acres. There has been much replanting in wet districts, from non-germination, and from destruction by worms. The stand is now moderately good, and the crop is growing finely. Condition by principal States: Ohio 96, Indiana 95, Illinois 93, Iowa 89, Missouri 91, Kansas 99, Nebraska 91. In the South: Virginia 91, North Carolina 88, South Carolina 87, Georgia 94, Alabama 96, Mississippi 97, Louisiana 95, Texas 95; Arkansas 97, Tennessee 98.

A preliminary investigation of the area of manufacturing leaf tobacco makes an increase of 18 per cent over the greatly reduced crop of last year. There is an increase of 4 per cent in the area of potatoes. Condition averages 95.7.

The European report for July makes the wheat crop late and unpromising throughout Europe, Russia excepted. The rye crop will be short in central Europe.

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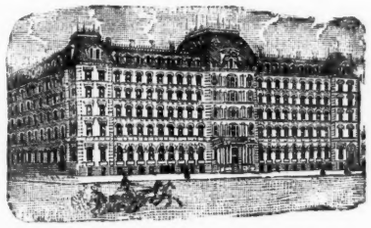

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Animal Ailments.

Cow Pox.—J. H. B. is informed that this is a disease which, once acquired, runs a definite course. It is not curable. Let the person milking an affected cow avoid inoculating himself by keeping his hands free from bruises, scratches, etc., and let him wash his hands before milking a well animal.

Feed for Colts.—F. Latus, Gallatin Co., Mon., asks us how to prevent costiveness in a young colt which he is bringing up by hand upon cow's milk. Boil half a pint of flaxseed in water until it becomes like a gruel, and give it in two feeds, added to the milk. This will not only check the tendency to constipation but furnish an important element to the growth of the colt.

Cribbing and Wind Sucking.—A. B. Anderson, Mercer Co., N. J., writes us: "I have a seven-year-old horse which takes hold of the manger and makes a peculiar noise; he also has frequent attacks of colic. What causes him to do this, and is it an unsoundness?" We should suppose this to be a "cribber" or "wind sucker." The latter does not take hold of anything, but sticks out the head and makes the same peculiar sound. If they are watched, a mass of air may be seen going down the esophagus. This gives rise to fermentation in the stomach and causes colic. Crib-biters are generally subject to colic, and are unsound. The trouble may be caused by imitation when a horse stands near a cribber. It may be due to restlessness, a horse standing in a stall for a long time acquiring it as a way of amusing himself; it is also hereditary. Some claim that it is due to indigestion, but this may well be questioned. A cribber should be put in a large, loose box, where there is nothing for it to seize with its teeth. Some use muzzles, and others put a strap around the neck; but this may produce malformation of the windpipe, and cause roaring.

Treatment for Abscesses.—R. W. E. inquires the cause of a discharging swelling on the hip of a cow that has not been bruised; also of a similar trouble on a calf's head. The first is difficult to reply to from such a limited description. See that the opening is so situated that the matter will escape as it is formed. Wash the cavity of the swelling twice daily with warm water, and follow the operation by applying the following lotion to every part of the cavity: Sulphate of zinc and acetate of lead, of each one ounce, water one quart. Shake it before using. Pack the wound (lightly) with cotton saturated with the same lotion. If the discharge is kept up by dead bone, or by some foreign material—as a splinter of wood—such bone or splinter must be removed. We cannot say what caused the trouble.

For the calf the same treatment is prescribed, except that it should be preceded by packing the cavity of the tumor with cotton saturated with a solution of corrosive sublimate; the packing being renewed at the end of twelve hours, and replaced by the solution treatment at the end of twenty-four hours. If the bone is diseased it may be well to isolate the calf, as a communicable disease known as actinomycosis may be present. This disease is practically incurable.

Pneumonia or Lung Fever in Swine.—This is usually fatal to the hog; but chiefly so because not recognized, or if so, persons do not know what to do. It is much more common, too, than many suppose. The external symptoms are, "off the feed," with a general feverish condition, a hacking and constant cough, and, as the disease progresses, harsh, heavy breathing. The disease is an inflammation of the substance of the lung, one or both, which causes matter to exudate and fill up a portion of the lung structure, so that air cannot pass through it at all. It is this that causes the heavy breathing. Physiologically, this prevents the due oxidization of the blood, and the animal dies in a state of coma or deep sleep, from which it cannot be aroused. It is therefore important to recognize the disease as soon as possible. It is caused primarily by cold and a debilitated condition of the system, though this latter may not be suspected.

I came near losing a valuable sow with pneumonia, and only prevented it by the most vigorous treatment. I had noticed that she was not eating her usual ration, and was coughing, but had attributed the cough to too much dust in her bedding. The weather was quite warm, but we had had a heavy rain storm a few days before. I was called away from the farm for the day, leaving only some small boys to look after the stock, and about 11 o'clock at night (the doors and windows being open) I was awakened by a peculiar noise. I stepped out on the porch next the hog lot, and discovered that it was the heavy breathing of an animal of some kind. Procuring a lantern, I followed the sound and found the sow up as near the house as she could get. She had been somewhat of a pet with me, and I fully believe she came over to that part of the lot—an unusual place—to seek my aid. I found her hot and feverish, and putting my ear to her chest discovered the trouble at once. I procured a sharp scalpel and severely nicked the skin all over the side covering the lung; just deep enough to bring the blood. I had in the meantime some water heating, and when it was almost scalding hot dipped woolen cloths in it, with which I enveloped the animal's lungs as well as I could. This I kept up until near morning. After a couple of hours of uninterrupted work, I had the satisfaction of seeing her breathing improved. During the process of cutting the skin, the animal did not offer to move, and beyond slight grunts took no notice. In extreme cases of this kind it is difficult to get medicine into the animals' throat, unless their thirst compels them to drink, which they often will. By this means I administered two doses of this mixture: Tincture of aconite root, fifteen drops; tincture of veratrine, five drops. At the second dose, about three hours later, I gave but ten drops of the first and six of the latter. As the sow took a little milk in the morning, I made no further attempt to treat her. I have spoken of this case at some length, as it often happens that a man would be very willing to lose a night's sleep in trying to save the animal, and this outlines what I think is the proper thing to do. Every man who keeps live stock of any kind ought to have a few things at hand in case of emergencies, medicines properly labeled, with the dose marked on them, and in some cases what they are used for. An outlay of two or three dollars, or even less, may sometimes prevent the loss of several times this amount.

There is probably a period of incubation of this disease with animals as in the human family, and this period may extend from two to five or six days: but as the animal will usually eat some food and the cough is not severe enough to excite attention, and, too, as we rarely put our hands on them, we do not discover that they are feverish. Hence the animal is about ready to die, and often does die, before disease is suspected. This and other cases should teach us to note the habits of our stock carefully. From the character and cause of this disease, one would naturally look for it in winter, but I have never known it to occur either in the hog or the horse in winter, though it may exist at any season.—[Dr. A. G. Chase, Kansas.

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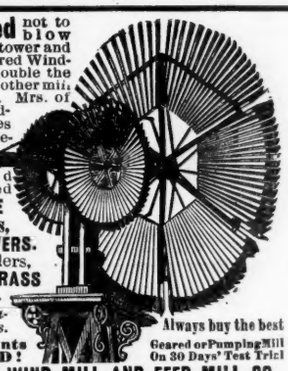

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Timely Topics.

Propagating Passion Flowers.—Mrs. Agnew, of Ontario, Canada: Most species of the Passion Flower (*Passiflora*) may be easily propagated by cuttings of the roots or of the young shoots, planting them in small pots of sandy soil. Spring is the best time for this.

Pasturing Cattle and Sheep.—Fred Bumann, Macoupin Co., Ill.: We would not recommend keeping cattle and sheep together in the same pasture. It is far better to separate them, keeping the sheep where the grass has been fed down the most. Sheep thrive much better on rather short pasture.

How to Prevent a Cow from Kicking.—W. H. Smith, of Howard Co., Ind., gives his method of dealing with a kicking cow as follows: "Take a half-inch rope, fasten a ring to one end, and put it over the cow's back just behind the hip bones and around under in front of the udder; put through the ring and draw medium tight, and the cow will behave."

Reduced Horticultural Postage.—The Postoffice Appropriation bill, which is now a law, provides "that hereafter the postage on seeds, cuttings, roots, cions and bulbs shall be charged at the rate of one cent for each two ounces or fraction thereof, subject in all other respects to the existing laws." This reduction of one-half was obtained in response to an organized demand upon Congress from the agricultural public, especially the Patrons of Husbandry.

Layering Roses.—Virginia: The process of layering roses consists in simply bending a shoot down to the ground and covering a part of it with soil, leaving the end of the shoot exposed. The soil where the shoot is to be layered should be made mellow and rich. It is necessary to hold the branch firm by a forked stick driven in the soil, or by placing a stone over the layer just where it is covered without soil. The layering may be done in summer, from this season's growth, or in springtime from the growths of the previous year. The layers may be detached from the parent plant either in the fall or in the spring, and transplanted wherever desired.

American Florists.—The annual meeting of the Society of American Florists will be held in New York from August 1 to 4. The sessions will be held in the Cooper Union, and the exhibition in Nelson Hall, 15th street, between Irving Place and Third Avenue. The headquarters of the officers will be at Fifth Avenue Hotel. From the reports received so far, it is evident that this convention will be the largest and most interesting in the history of the society. Delegations from nearly every State in the Union will be present, and among them the most successful and prominent florists in the country. Arrangements for special rates with railroads and hotels have been made, and no florist can well afford not to avail himself of this occasion for meeting those engaged in the same pursuits, and informing himself of the progress made in his profession. For full programme and other information pertaining to this meeting address the Secretary, Mr. William J. Stewart, Boston, Mass.

"Finale" of the Wire and Picket Fence.—Mr. George Boyden, Washington, D. C., writes us: "I have been much interested in the controversy in regard to the wire and picket fence described by Mr. Teeters in the March number of the AMERICAN AGRICULTURIST. To satisfy myself whether it was covered by a patent or not, I made a personal examination at the Patent Office and this is the result: I find that Mr. Rappelye was granted a patent dated July 4, 1871, on substantially the same style of fence and almost the identical manner of making it; using the doubletree, etc. He used a sled as an anchor. On December 16, 1873, the patent was re-issued to him. It expired on July 4, 1888. If the Commissioner wrote to the Kentucky lady that it had two years yet to run, he was mistaken, the error being caused probably by thinking that the original issue was made in 1873, while it was in 1871. A patent runs seventeen years from the issue of it, and no re-issue affects the time."

The Best Mules.—J. W. Cook, of Dallas Co., Texas, asks us whether the finest looking and best shaped mules are raised in Missouri or Kentucky. Undoubtedly Kentucky carries off the palm in this respect, as the breeding of mules has been long conducted there. There are many intelligent mule breeders in Missouri; but the Kentucky stock has the general preference. Kentucky mules upon an average are worth ten dollars per head more than the Missouri mules, from the fact that they are better bred. There is more thoroughbred blood diffused among the horse stock generally of Kentucky and Tennessee than in any other State in the Union, thus giving a better class of mares to bred from than can be found outside of these two States. On the other hand the blood of the Clyde and Percheron, mixed with the coarse Canadian, is the foundation of a large number of the brood mares in the Northwest. They produce large, coarse, sluggish mules, not to be compared to the somewhat smaller but clean-limbed, active and high-spirited mules out of well-bred Kentucky mares. No animal shows the effects of good breeding more readily or to greater advantage than a mule.

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